

# CURRICULUM AND SYLLABUSES

UNDER THE REORGANISED  
PATTERN OF SECONDARY EDUCATION

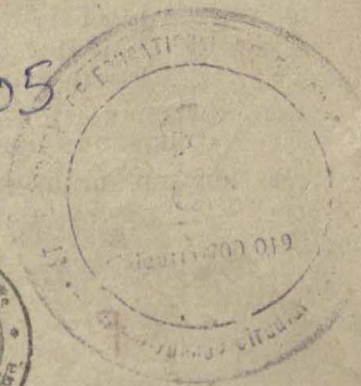
( CLASSES VI, VII, VIII, IX & X )

INTRODUCED FROM 1974

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REVISED TIME TO TIME

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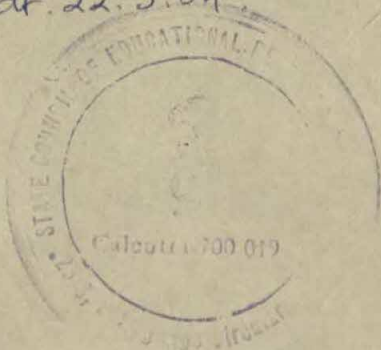
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# **WEST BENGAL BOARD OF SECONDARY EDUCATION**

## **CURRICULUM, SYLLABUSES AND TEXT-BOOKS FOR**

## **THE REORGANISED PATTERN OF SECONDARY EDUCATION**

**( From 1974 )**

### **INTRODUCTION**

The reorganised pattern of 10-Class Secondary Education has been introduced in all the Secondary Schools under this Board from 1. 1. 1974. All students, joining classes VI, VII, VIII, IX and X are to follow the new pattern of Secondary Education.

A public examination entitled Madhyamik Pariksha (Secondary Examination) shall mark the end of the course of Secondary Education of five years from Classes VI to X.

The Curriculum, Syllabuses and Prescribed Text-books for Classes VI, VII and VIII are same in all the schools, whether Junior High Schools or High Schools, reorganised under the new structural pattern from 1.1.1974.

Any of the recognised First Languages may be used as a medium of instruction, but answers at the Board's Madhyamik Pariksha (Secondary Examination) at the end of Class X can be written only in Bengali, English, Hindi, Nepali, Urdu or Oriya. In a language-paper, however, answers must be written in that language unless otherwise specified in the Question Paper.

The new Curriculum and Syllabuses were introduced in Class VI and Class IX on 1.1. 1974 and in Classes VII, VIII and X in 1975. Text books written according to the new syllabuses and recommended by the Board should only be prescribed for use by pupils for all the Classes from 1977. No other text-books should be prescribed for use by pupils in the subjects in which there are books published/recommended by the Board. For subjects in which there are no recommended books, any book adequately covering the syllabus and the instructions for preparation of such books, if any, may be recommended for use by pupils. Books should be selected by the Headmaster/Headmistress in consultation with the Subject-Teachers. Every book should be selected on its merit and not any other consideration.

## NUMERALS AND SYMBOLS IN MATHEMATICS

International numerals should be used. For symbols, only English alphabets should be used excepting cases where Greek letters are usual.

## SCIENTIFIC TERMS IN TEXT-BOOK ON PHYSICAL SCIENCES, LIFE SCIENCE, ETC.

In books written in Bengali, the scientific terms used in Standard Bengali Dictionaries or by the Calcutta University Paribhasa Samity should be adopted. Those not available should be retained in English, but transcribed in Bengali. In books written in languages other than Bengali, the technical terms should be retained in English, but transcribed in the language used. They should never be translated.



Books should be adequately illustrated with diagrams. Where specific instruction has not been given, the diagrams should not be less than 3·8 cm. × 3·8 cm. in size. Where diagrams of microscopic objects are given, the magnification must be stated.

## ADMISSION

No first admission in a school shall be allowed to any class higher than Class IX.

All admissions on production of Transfer Certificates from recognised schools are subject to the following conditions :

(i) That the Head of the Institution, where such admission is sought, finds the pupil fit for admission to the class in which he/she has been reading, or to which he/she has been promoted.

and

(ii) That such admission is sought within one month from the date of discontinuance of studies of the pupil concerned.

No admission on transfer should be made after the 31st August without securing approval of the Board. The cases of admission of wards of Government employees in transferable service may, however, be considered, if necessary, upto the 31st October but not later. An application for such approval must clearly state the reason for the transfer, and must carry the recommendation of the school where admission is sought.

Cases of admission of students in Class X on transfer from other recognised schools. are required to be referred the Board for approval.

# CHAPTER I

## CURRICULUM AND SYLLABUSES

### (Regular Candidates)

It is notified for general information that after careful consideration and in consultation with the Secondary Teachers' Organisations in the State and Experts and with the concurrence of the Government of West Bengal, The West Bengal, Board of Secondary Education has decided to introduce the following language pattern from the academic session of 1979 ;

Two languages (First Language & Second Language) are to be taught compulsorily for the Madhyamik Pariksha (Secondary Examination) 1981 onwards. The First Language will be the mother-tongue, but if the mother tongue is not recognised as a First Language as per the list contained at page 7 of Curriculum & Syllabuses any prescribed regional language should be the first language.

Second Language will be English:—

If English is offered as First Language by any candidate, the regional language (Bengali/Nepali) will have to be chosen as Second Language.

A Third Language (a classical language/a modern Indian language/a modern foreign language) which will be taught compulsorily in classes VII & VIII may, however, be retained as an additional subject (Additional B level) on optional basis if a candidate so desires. In that case he will not be allowed to take up any other additional subject. Marks in excess of 34 secured in the Additional Subject will be added to the total of a successful candidate to determine the division in which he/she will be placed.

A. CURRICULUM FOR CLASSES VI, VII AND VIII OF JUNIOR HIGH SCHOOLS AND X-CLASS HIGH SCHOOLS REORGANISED UNDER THE REVISED STRUCTURAL PATTERN FROM 1.1.1974

(1) First Language : One paper. 100 marks (including 10 marks for Oral Test). [The following are the recognised First Languages :—Assamese, Bengali, English, Gujarati, Hindi, Lushai, Malayalam, Marathi, Modern Tibetan, Nepali, Oriya, Punjabi (Gurumukhi), Tamil, Telugu, Urdu, Santali and Sadani]

(2) Second Language : One paper. 100 marks (including 10 marks for Oral Test) English or Bengali/Nepali :

(a) Bengali / Nepali for those who will offer English as First Language ;

(b). English, for those who will offer a language other than English as First Language.

(3) Third Language : One paper. 100 marks (Class VII & VIII) [A Third Language has to be selected from any one of the following groups :

(a) A Classical Language (Sanskrit, Pali, Persian, Arabic, Greek, Latin, Classical Tibetan, Classical Armenian) ;

(b) A Modern Foreign Language other than English (French, German, Russian, Portuguese, Spanish, Italian) ;

(c) A Modern Indian Language other than the First Language, as may be approved by the Board].



- (4) Mathematics : One paper. 100 marks
- (5) Physical Sciences (Classes VII and VIII) : One paper. 100 marks (including 10 marks for Oral Test)
- (6) Life Science (Classes VI, VII and VIII) : One paper 100 marks (including 10 marks for Oral Test)
- (7) History : One paper 100 marks (including 10 marks for Oral Test)
- (8) Geography : One paper 100 marks (including 10 marks for Oral Test)
- (9) Work Education, Physical Education and Social Service including School Performance : One paper 100 marks.

Total 700 marks for Class VI, 900 marks for Classes VII and VIII.

There will be no written examination in Work Education. Physical Education and Social Service including School Performance in any class from VI to X.

Records should be maintained properly for each student from Class VI to Class VIII on his/her achievements in oral tests and school performance. A certain percentage of marks secured by him/her in oral tests and school performance in Classes VI, VII and VIII has to be carried forward and added to the marks assigned to respective subjects for Oral Test and School performance for the Madhyamik Pariksha (Secondary Examination) at the end of Class X.



**B. CURRICULUM FOR THE MADHYAMIK PARIKSHA  
(SECONDARY EXAMINATION), 1982 AND ONWARDS**

**(Regular candidates for classes IX & X)**

**1. First Language**—Two papers of 100 marks each. 200 marks (including 20 marks allotted to Oral Test).

[The following are the recognised First Languages]

- |              |                         |
|--------------|-------------------------|
| 1. Assamese  | 9. Modern Tibetan       |
| 2. Bengali   | 10. Nepali              |
| 3. English   | 11. Oriya               |
| 4. Gujarati  | 12. Punjabi (Gurumukhi) |
| 5. Hindi     | 13. Santali             |
| 6. Lushai    | 14. Sadani              |
| 7. Malayalam | 15. Telugu              |
| 8. Marathi   | 16. Tamil               |
|              | 17. Urdu                |

**2. Second Language**—One Paper. 100 Marks : English.

A regional language (Bengali/Nepali) for those who will offer English as First Language.

**3. Mathematics**—One Paper. 100 Marks

**4. Physical Sciences**—One Paper. 100 Marks

(including 10 marks allotted to Oral Test and class record).

**5. Life Science**—One Paper. 100 marks (including 10 marks allotted to Oral Test and class record)

**6. History**—One Paper. 100 marks (including 10 marks for Oral Test and class record).

**7. Geography**—One Paper. 100 marks (including 10 marks for Oral Test, Project Work and class record).

**8. Work Education, Physical Education & Social Service Including School Performance**—One Paper = 100 marks (Work-Education—50 marks, Physical Education—30 marks, Social Service—10 marks, School Performance—10 marks.)

**Total : 9 papers : 900 marks** ( including 160 marks for Oral Test, Project Work and for Item No. 8).

**9. An Additional Subject**—One paper. 100 marks.

Candidates must offer the subjects from 1 to 8 compulsorily.

They may also offer **only one Additional Subject** (100 marks) on optional basis from the following lists :—

(i) A-level Language Additional ;

(ii) B-level Language Additional ;

(iii) Other Additional Subjects.

(i) **A-level Language Additional**

Bengali, English, Hindi, Nepali & Urdu.

(ii) **B-level Language Additional**

Bengali, Sanskrit, Pali, Persian, Arabic, Latin, Greek, Classical Tibetan, French, German, Russian, Hindi.

Portuguese

Spanish

Italian

Nepali

Classical Armenian

Syllabus to be notified later on.

(iii) **Other Additional Subjects.**

- (a) **Academic Subjects**—Additional Mathematics, Elements of Discrete Mathematics, Physics, Chemistry, Biology, Mechanics, Geography, Outlines of World History, Logic, Psychology, Business Method and Correspondence, Book-Keeping, Elements of Economics & Civics, Home Science including Home Nursing (For Girls only), Music-Vocal, Music-Instrumental, Elements of Indian Art, Elements of Journalism,
- (b) **Vocational Subjects**—Sewing and Needle craft, Elements of Agriculture & Horticulture, Pisciculture, Animal Husbandry including Poultry Farming Short-hand and Typewriting, Elements of General Engineering Knowledge Wood-work and Workshop Technology, Building Materials and Construction.

Marks in excess of 34 secured in the Additional Subject will be added to the total of a successful candidate to determine the Division in which he/she will be placed.

**Eligibility for taking A-level & B-level Language Additional (Regular candidates) :—**

The candidates who take up a particular language either as First or Second Language are only eligible to offer A-Level Additional of that language (Higher level).

The candidates who studied a particular language in classes VII & VIII as Third Language are only eligible to offer that very Language as B-level Additional.



## MEDIUM OF INSTRUCTION AND MEDIUM OF EXAMINATION

Any of the approved First Languages may be used as the medium of instruction in schools, but answers at the Board's Examinations can be written only in Bengali, English, Hindi, Nepali, Urdu or Oriya. In a language paper answers must be written in that language unless otherwise specified in the question paper.

### BOOKS :

In the language-subjects, the Board will prescribe books and pieces to be read. The Board will also prescribe or recommend books in non-language subjects for use in schools i. e. in Mathematics, Physical Sciences, Life Science, History and Geography etc. As there will be no written examination in Work Education, Physical Education and Social Service including School Performance, in any class from VI to X, school must not prescribe any text book in these subjects.

### ELIGIBILITY FOR ADMISSION TO THE MADHYAMIK PARIKSHA (SECONDARY EXAMINATION)

Regular candidates are eligible for admission to the Madhyamik Pariksha (Secondary Examination) at the end of class X according to the new structural pattern. 'Regular' candidates are those who, having prosecuted a regular course of studies in the High School recognised by the Board, are presented at the Madhyamik Pariksha (Secondary Examination) at the end of class X. No one will be allowed to take the Final Examination of the Board at the end of class X unless he/she has prosecuted a complete course of studies in a class X-School recognised by the Board.



## MINIMUM MARKS FOR A PASS IN A SUBJECT

The total of the marks secured by a candidate in the written examination and the Oral Tests will determine the Pass in that subject. With regard to the Oral Test and School Performance, some credit should be given to a candidate for his/her performance in Classes VI, VII & VIII.

## MINIMUM MARKS FOR A PASS AND PLACE IN DIVISION

To be declared successful at the Final Examination at the end of Class X according to the revised structural pattern, a candidate shall have to pass in Groups of Subjects, namely (a) Language Group (300 marks): First Language (200 marks), Second Language (100 marks), (b) Science Group (300 marks): Mathematics (100 marks), Physical Sciences (100 marks), Life Science (100 marks), (c) History & Geography:—History (100 marks), Geography (100 marks), and (d) Work Education, Physical Education & Social Service including School Performance (100 marks). The concept of pass in an individual subject is replaced by a pass in each group. So, a candidate must obtain pass marks in each group of subjects. The aggregate pass marks in a group will be 34% excluding the marks in Additional Subject, if any, and the minimum qualifying marks in each subject will be 20%. This principle may be followed by the schools in the Annual Examinations as well.

Marks in excess of 34, secured in the additional subject will be added to the total of a successful candidate to determine the division in which he/she will placed.

Minimum aggregate for First Division	60%
“ “ “ Second Division	45%
“ “ “ Third Division	34%

The Tests on Work Education, Physical Education and Social Service including School Performance for the Board's Final Examination at the end of Class X will be conducted by External Examiners to be appointed by the Board. Oral Tests on other subjects will be conducted internally by the respective schools. From 1983 onwards marks on Oral Tests secured in the Test Examination are accepted for the Board's Final Examination.

## CURRICULUM AND SYLLABUSES FOR EXTERNAL CANDIDATES

Curriculum and Syllabuses for External Candidates appearing at the Board's Madhyamik Pariksha (Secondary Examination) to be held from 1982 onwards.

The following curriculum and syllabuses are prescribed for External Candidates who will appear at the Board's Madhyamik Pariksha (Secondary Examination) to be held in 1982 onwards under the reorganised pattern of secondary Education introduced from 1974.

### 1. CURRICULUM AND SYLLABUSES FOR EXTERNAL CANDIDATES

- |  |  |
|--|--|
| (1) First Language<br>(Any one language from<br>the list of First Language<br>given below) | Two papers of 100 marks each<br>(The course-content is the<br>same as that prescribed for<br>the Regular candidates) |
|--|--|

### LIST OF FIRST LANGUAGE

- |             |             |
|-------------|-------------|
| 1. Assamese | 10. Nepali  |
| 2. Bengali  | 11. Oriya   |
| 3. English  | 12. Punjabi |

- |                   |             |
|-------------------|-------------|
| 4. Gujarati       | (Gurumukhi) |
| 5. Hindi          | 13. Santali |
| 6. Lushai         | 14. Sadani  |
| 7. Malayalam      | 15. Telugu  |
| 8. Modern Tibetan | 16. Tamil   |
| 9. Marathi        | 17. Urdu    |

**(2) SECOND LANGUAGE**

English-If any language other than English is offered as the First Language.

Bengali/Nepali-If English is offered as the First Language.

One paper of 100 marks (the course-content is the same as that prescribed for the Regular Candidates)

**(3) Mathematics**

One paper of 100 Marks ( the course content is the same as that prescribed for Regular Candidates )

**(4) Life Science**

One paper of 100 marks (A separate syllabus for External Candidates has been prescribed).

**(5) Physical Sciences**

One paper of 100 marks (A separate syllabus for the External Candidates has been prescribed)

**(6) History**

One paper of 100 marks (the course-content is the same as that prescribed for the Regular Candidates).



- |   |  |
|---|--|
| (7) <b>Geography</b>  | One paper of 100 marks (the course-content is the same as that prescribed for the Regular Candidates).                                       |
| (8) <b>One subject from the following :</b>                         | One paper of 100 marks (the course-content is the same as that in the respective Additional Subjects prescribed for the Regular Candidates). |
| (ii) Elements of Economics and Civics                               |  |
| (ii) Business Method and Correspondence.                            |  |
| (iii) Home Science including Home Nursing ( for Girl students only) |  |
|   | Total— 900 marks   |

The External candidates for M. P. S. E. may also offer only one Additional Subject (100 marks) on optional basis from the following list :—

- (i) A-level Language Additional ;
- (ii) B-level Language Additional ;
- (iii) Other Additional subjects.
- (i) **A-Level Language Additional**  
Bengali, English, Hindi, Nepali & Urdu.
- (ii) **B-Level Language Additional**  
Bengali, Sanskrit, Pali, Persian, Arabic, Latin, Greck, Classical Tibetan, French, German, Russian & Hindi.

(Portuguese  
Spanish  
Italian  
Nepali  
Classical Armenian

Syllabuses to be notified later on



**(iii) Other Additional Subject**

**Academic Subjects**—Additional Mathematics, Elements of Discrete Mathematics, Physics, Chemistry, Biology, Mechanics, Geography, Outlines of World History, Logic, Psychology, Business Method and Correspondence, Book-Keeping, Elements of Economics and Civics, Home Science including Home Nursing (for girls only), Music—Vocal, Music-Instrumental, Elements of Indian Art, Elements of Journalism, Physiology and Hygiene.

Marks in excess of 34 secured in the Additional Subject taken up on optional basis will be added to the total of a successful candidate to determine the Division in which he/she will be placed.

**Eligibility for offering A-level and B-level Language Additional.**

The candidates who take up a particular Language either as First or Second Language, are only eligible to offer A-level Additional of that Language on optional basis.

Any Language as included in the list of B-level Language Additional may be offered by a candidate as an Additional Subject on optional basis if that Language is not chosen either as First and Second Language.

## DISTRIBUTION OF MARKS FOR EXTERNAL CANDIDATES

**Minimum marks for a pass and a place in a division for External Candidates.**

To be declared successful at the Madhyamik Pariksha (Secondary Examination) an External Candidate shall have to pass in Groups of subjects, namely :

- |  |  |
|--|--|
| <p>(a) Language Group<br/>(300 marks)</p>  | <p>First Language 200 marks)<br/>Second Language (100 marks)</p>   |
| <p>(b) Science Group<br/>(300 marks)</p>   | <p>Mathematics (100 marks)<br/>Physical Sciences (100 marks)<br/>Life Science (100 marks)</p>  |
| <p>(c) History and Geography<br/>(200 marks)</p>   | <p>History (100 marks)<br/>Geography (100 marks)</p>   |
| <p>(d) One subject (100 marks)<br/>from :</p>  | <p>(i) Elements of Economics<br/>and Civics (100 marks)<br/>(ii) Business Method and<br/>correspondance (100 marks)<br/>(iii) Home Science including<br/>Home Nursing for Girls<br/>(100. marks)</p> |
| <p>(e) One Additionl subject may<br/>be offered on optional basis<br/>from one of the prescribed<br/>subjects (100 marks).</p> |  |

## II. RULES FOR ADMISSION AS EXTERNAL CANDIDATES

1. External Candidates who will appear at the Board's Madhyamik Pariksha (Secondary Examination) should register their names on payment of a Registration Fee of Rs. 5.00 at the respective Regional Examination Council one year ahead i.e., between March and May of the year preceeding the year of the Madhyamik Pariksha (Secondary Examination) for External Candidates.
2. The Regional Examination Councils will then arrange for Test Examination for External Candidates at different centres within their jurisdiction.
3. Other fees as admissible will also be paid in addition to the Registration fee of Rs. 5.00.
4. Minimum marks for a pass in a subject : Minimum marks for a pass and place in a Division and other rules for admission of External (Private) candidates as approved by the Board will remain in force untill further orderds.
5. The existing privileges to blind candidates will continue.

Table—I

Suggestive number of working periods (Time-Table) per week

Class	1st Language	2nd Language	3rd Language	Mathematics	Sciences		History	Geography	Work Education	Physical Education	Addl. Subjects	Total
					Physical Sc.	Life Sc.						
X	8	6	—	6	3	3	3	3	2	2	3	39
IX	8	6	—	6	3	3	3	3	2	2	3	39
VIII	8	6	3	6	3	3	3	3	2	2	—	39
VII	8	6	3	6	3	3	3	3	2	2	—	39
VI	8	6	—	6	—	3	3	3	2	2	—	33

Instructional days in a school should be 200 days including Saturdays which are half holidays with instructional works of 1000 hours per year (Vide the Board's Circular No. 13/67 dated 22. 8. 67. )



Table—II

Number of Periods Required in a year  
to Cover the New Syllabus :

SUBJECTS	CLASSES					
	X	IX	VII	VII	VI	
1st Language	162	162	162	162	135	
2nd Language	108	108	108	108	108	
3rd Language			81	81		
Mathematics	108	108	108	108	108	
Science	216	216	162	162	108	
History	81	81	81	81	81	
Geography	81	81	81	81	81	
Work Education etc.	108	81	108	108	108	
Additional sub. on optional basis	81	81				

The working periods mentioned in the table have been calculated on the basis of 160 working days. The number of teaching periods as shown in the table is the minimum requirement to cover the syllabus. The Heads of Institutions may allocate the additional number of teaching periods available out of 39 periods per week to subjects according to the requirement.

## CHAPTER II

### FIRST LANGUAGE

#### A. OBJECTIVES OF TEACHING A FIRST LANGUAGE

Language occupies a pivotal place in the child's educational programme. For, language as the basic ingredient of thought process gives concrete shape to ideas and conceptions and serves as vehicle of expression in oral, written and other forms. No one can develop precision of thought or clarity of ideas without facility of language. It is essential on the part of the pupil for effective functioning as a citizen. Moreover, it is through language that the child is introduced to the rich heritage of his peoples' ideas, emotions and aspirations. In it he finds a natural outlet for the expression of his aesthetic sense and appreciation, a source of joy and creative elements. The proper teaching of the mother tongue is the foundation of all education since on it depends, to a large extent, the blossoming of the intellectual capacity and colourful personality of the people.

The syllabus has been drawn up keeping this broad objective in view and arranged in progressive depth and width in consonance with the mental growth of the pupils of different classes.

#### OBJECTIVES

##### (For Classes VI to VIII)

The principal objectives of the study of the mother tongue will be to enable the pupil to :

- (1) Read aloud clearly, expressively and with proper intonation—both prose and poetry—avoiding monotonous and bored style of reading.

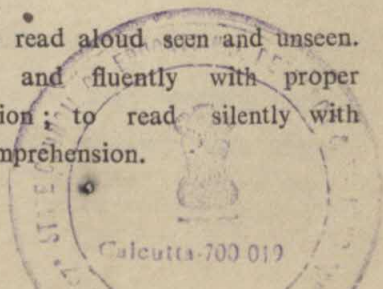
- (2) Speak and converse freely with lucid expression in coherent and relevant manner.
- (3) Write a neat hand attaining legibility, beauty and reasonable speed.
- (4) Read silently with comprehension and speed suitable passages on topics within his intellectual scope.
- (5) Describe in writing in a simple and clear style everyday happenings and occurrences, experience of incidents and enjoyment, results of observation and activities.
- (6) Consult dictionaries and other reference materials and profit thereby.
- (7) Form an acquaintance with the writings of the standard authors through a study of their works, extracts or condensations from them.

In continuation of the syllabus of the junior forms, the pupils will be progressively initiated into the realm of the mother tongue, its structure and wealth, its extent and vision.

The broad objectives of the study of the mother tongue in the upper forms will be to—

- (1) Acquaint the pupil with the basic structure of his mother tongue and important elements of its grammar and idiom.
- (2) Develop his ability to read aloud seen and unseen passages expressively and fluently with proper emphasis and articulation; to read silently with reasonable speed and comprehension.

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- (3) Enable him—(a) to reply to questions correctly, politely and without fumbling :  
(b) to put forward his feelings and views clearly, cogently and effectively :  
(c) to participate in discussions and conversations in a natural and graceful manner.
  - (4) Appreciate and enjoy good literature in its various branches and imbibe noble sentiments and ideas as embodied therein.
  - (5) Inspire him to creative literary activities through independent thinking and elegant self-expression.
-



## B. Syllabuses and Paperwise Distribution of Marks.

### (১) বাংলা

#### ( প্রথম ভাষা )

#### ॥ শিক্ষাদানের উদ্দেশ্য ॥

শিশুর শিক্ষাসূচীতে ভাষার স্থান বিশেষ গুরুত্বপূর্ণ। কারণ, ভাষা ভাবচিন্তার ধারক এবং ভাষাকে অবলম্বন করিয়াই অনুভূতি, মনোভাব, রূপ-কল্পনা, মৌখিক, লিখিত বা ভাষার অন্য প্রকার প্রকাশের ভিতর দিয়া যথার্থ রূপ পরিগ্রহ করে। ভাষার উপর সাবলীল অধিকার ছাড়া চিন্তার যথাযথ প্রকাশ বা মনের ভাবের স্বচ্ছতা কখনোই সম্ভব নয়। তাহা ছাড়া, ভাষার মাধ্যমেই শিশুকে তাহার দেশবাসীর আশা-আকাঙ্ক্ষা, চিন্তাভাবনার সহিত পরিচিতি করানো হয়। ইহার ভিতর সে খাঁজিয়া পায় স্মৃতি-সৌন্দর্য প্রকাশের পথ, আনন্দের উৎস এবং সৃজনাত্মক উপাদান। যথাযোগ্যভাবে মাতৃভাষা শিক্ষাদানই সব শিক্ষার ভিত্তি, কারণ মানুষের বুদ্ধিবৃত্তি ও মনোহর ব্যক্তিত্বের পরিপূর্ণ বিকাশ বহুলাংশে ইহারই উপর নির্ভর করে।

এই গুরুত্বের প্রতি লক্ষ্য রাখিয়া পাঠক্রম প্রস্তুত করা হইয়াছে এবং শিক্ষার্থীদের বয়স ও মননশক্তির ক্রমবৃদ্ধি বিবেচনা করিয়া সেই অনুসারে পাঠ্যবিষয়ের গভীরতা ও বিস্তৃতি সম্পাদনের চেষ্টা করা হইয়াছে।

#### উদ্দেশ্য

#### ( ষষ্ঠ হইতে অষ্টম শ্রেণী )

মাতৃভাষা শিক্ষার প্রধান উদ্দেশ্য হইবে, ছাত্রছাত্রীগণ যেন—

১। স্পষ্ট উচ্চারণে, অর্থ-প্রকাশকভাবে এবং সঠিক স্বরভঙ্গিতে পদ্য ও গদ্য রচনা পড়িতে পারে, এক্ষেত্রে শ্রুতিক্রান্তিকর পাঠ-অভ্যাস বর্জন করিতে পারে।

২। ভাষার স্বচ্ছন্দ প্রকাশে কথা বলিতে ও কোন বিষয় সম্বন্ধে আলোচনা করিতে সমর্থ হয়।

৩। স্পষ্ট, সুন্দর ও মোটামুটি দ্রুত হস্তাক্ষরে লিখিতে অভ্যস্ত হয়।

৪। তাহার জ্ঞান-পরিধির বহির্ভূত নয় এমন পাঠ্যবিষয় নীরবে পড়িয়া বদ্বিধিতে পারে।

৫। প্রতিদিনকার ঘটনা, আনন্দানন্দভূতির অভিজ্ঞতা, কোন বিশেষ কাজ বা পৰ্ববেষ্টিতের বিবরণ সহজ সাবলীল ভাষায় লিখিতে সক্ষম হয়।

৬। অভিধান ইত্যাদি হইতে তথ্য সংগ্রহ করিয়া জ্ঞানবৃদ্ধি করিতে পারে।

৭। স্বীকৃত লেখকদিগের রচনা বা সংক্ষেপিত অংশ-বিশেষের সাহিত্য পরিচিত হয়।

নিম্নশ্রেণীর পাঠ্যক্রম অনুসরণ করিয়া ছাত্রছাত্রীদিগকে ক্রমে মাতৃভাষার জগতে প্রবেশ করিতে হইবে, সেখানে ইহার গঠন ও সম্পদ, বিস্তার ও স্বপ্নকল্পনার সাহিত্য তাহাদের পরিচয় হইবে।

উপরের শ্রেণীতে মাতৃভাষার শিক্ষার প্রধান উদ্দেশ্য হইবে :—

১। মাতৃভাষার মৌল গঠন, ব্যাকরণের মূল রীতি ও বান্ধিধির সাহিত্য ছাত্রছাত্রীর পরিচয় সাধন।

২। পূর্বে-দেখা এবং অ-দেখা রচনাংশ অর্থপ্রকাশকভাবে, দ্রুত এবং যথার্থ স্বরভঙ্গিতে পাঠ করিতে ছাত্রছাত্রীকে সক্ষম করা, সে যেন নীরবে দ্রুত পাঠ করিয়া রচনার অর্থ বদ্বিধিতে পারে।

৩। ছাত্রছাত্রী যেন—

(ক) সঠিকভাবে, ভদ্রভাবে এবং জড়তাবিহীনভাবে প্রশ্নের উত্তর দিতে সমর্থ হয়।

(খ) নিজের মনোভাব ও বক্তব্য স্পষ্ট ভাষায় যুক্তিপূর্ণভাবে প্রকাশ করিতে পারে।

(গ) কোন বিষয়ের আলোচনায় ও পরস্পর ভাব আদান-প্রদানের সময় সহজ ও স্বাভাবিক সৌজন্য সহকারে অংশ গ্রহণ করিতে পারে।

৪। সংসাহিত্যের রস আনন্দাদন, তাহা হইতে আনন্দলাভ এবং তাহাতে নিহিত মহৎ ভাব ও আদর্শ গ্রহণে নিজের জীবনকে সুন্দর ও সার্থক করিতে উৎসাহী হয়।

৫। স্বাধীন চিন্তা ও সুর্দীচকর আত্মপ্রকাশের ভিতর দিয়া সৃষ্টিধর্মী সাহিত্যকর্মে অনুপ্রাণিত হয়।

## বাংলা

( প্রথম ভাষা )

### ষষ্ঠ শ্রেণী

একটি পত্র—পূর্ণ সংখ্যা ১০০

( লেখ্য বিষয় ৯০ + মৌখিক ১০ )

১। পাঠ্যগ্রন্থ	(ক) গদ্যাংশ	২০
	(খ) পদ্যাংশ	২০
২। ব্যাকরণ		২০
৩। পত্ররচনা ও অনুচ্ছেদ লিখন		১৫
৪। সহায়ক পাঠ		১৫
৫। মৌখিক		১০
		<hr/>
		১০০

১। গদ্যাংশ ও পদ্যাংশ সম্বলিত একটি পাঠ্যগ্রন্থ থাকিবে :

গদ্যাংশের জন্য ৪০ পৃষ্ঠা এবং পদ্যাংশের জন্য ২০ পৃষ্ঠা, মোট ৬০ পৃষ্ঠার গ্রন্থ হইবে। গদ্যাংশে ও পদ্যাংশে আনুমানিক ১০ টি করিয়া রচনা ও কবিতা থাকা বাঞ্ছনীয়। গদ্যাংশের জন্য ধর্মপ্রাণ ব্যক্তি, সমাজ-সংস্কারক ও মনীষীদের জীবনকথা, বৈচিত্র্যমূলক সাহিত্যিক ও দেশাত্মবোধক রচনা, গল্প, উপাখ্যান, ভ্রমণ-কাহিনী, অভিযান ও আবিষ্কার প্রভৃতি বিষয়ে প্রসিদ্ধ লেখকবর্গের রচনাংশ



সংকলিত হইবে। সংকলনকারীর নিজস্ব রচনাও স্থান পাইতে পারে। পদ্যাংশে সাধু ও চলিত উভয় রীতির রচনা থাকা আবশ্যিক।

পদ্যাংশের জন্য বিভিন্ন ভাব ও ছন্দের কবিতা সংকলন করিতে হইবে। এই পর্যায়ে বাংলা ও বাঙ্গালীর জাতীয়তা বিষয়ক কথার অবকাশ থাকাও বাঞ্ছনীয়।

গ্রন্থের আকার হইবে ২২" × ৩২" (১১")। টাইপ পাইকা (২৪ এম)। বিস্তৃত অন্দুলীলনী থাকিবে এবং তাহার জন্য স্মল পাইকা টাইপ চলিবে। অন্দুলীলনী এবং চিত্রাদির জন্য ঘাটের উপর অতিরিক্ত ৮ পৃষ্ঠা বাড়ানো চলিবে।

## ২। ব্যাকরণের পাঠ্যসূচী :

- (ক) স্বর ও ব্যঞ্জনবর্ণ, হ্রস্ব ও দীর্ঘ স্বর ; যৌগিক স্বর। ব্যঞ্জনবর্ণের বর্ণবিভাগ ও বর্ণের নাম। উষ্মবর্ণ ও অন্তঃস্থ বর্ণগুলির পরিচয়।
- (খ) স্বরসম্বন্ধ : ( আ-ঈ-উ-এ-ও-ঐ-ঔ মাত্র ) ও ব্যঞ্জনসম্বন্ধ : ( ত, দ+চ, ছ ; ত, দ+জ, ঝ ; ত, দ+ল ; বর্ণের প্রথম বর্ণ + ন, ম ; ম্ + অন্তঃস্থ ও উষ্মবর্ণ প্রভৃতি কয়েকটি সহজ বিষয় মাত্র )।
- (গ) শব্দ বিধান ( ঋ, র, ষ কারের পর ণ। স্বরবর্ণ, ক-বর্ণ, প-বর্ণ এবং য, ব, হ বর্ণের ব্যবধান থাকিলেও ণ। ( ণ-কার যুক্ত যথাসম্ভব পরিচিত শব্দের দৃষ্টান্ত দেয় )। শব্দ বিধান ( ঋ ষ কারের পর ও অন্যত্র ষ। ষ-কার যুক্ত যথাসম্ভব প্রচলিত কিছু শব্দের দৃষ্টান্ত দেয় )।
- (ঘ) পদপরিচয় ( বিশেষ্য, সর্বনাম, বিশেষণ, ক্রিয়া ও অব্যয়ের সাধারণ পরিচয় দান )।
- (ঙ) লিঙ্গ ( সাধারণ আলোচনা, পদ্য হইতে স্ত্রীলিঙ্গে রূপান্তর—কেবল আ, ঈ, আনী—ইনী-যোগের এবং পিতা-মাতা, পুত্র-কন্যা জাতীয় পরিচিত দৃষ্টান্ত )।
- (চ) বচন ( সাধারণ আলোচনা )।
- (ছ) পুরুষ ( সাধারণ আলোচনা )।



(জ) **সাধু ও চলিত রীতি :** সর্বনাম ও ক্রিয়াপদের সাধু ও চলিত রূপ মাত্র প্রদর্শনীয়।

(ঝ) **সমনাম বা একার্থক শব্দের পরিচয়** ( অঙ্গ-প্রত্যঙ্গ ; হস্ত-পদাদি। প্রাকৃত বস্তু—পৃথিবী-আকাশাদি, চন্দ্র-সূর্যাদি, সমুদ্র-পর্বতাদি। পরিচিত পরিবেশ, পরিজন। প্রতি বিষয়ে অস্ততঃ তিনটি করিয়া শব্দ )।

(ঞ) **শুদ্ধ বানান শিক্ষা** ( মূখ্যতঃ ই-ঈ কার, উ-ঊ কার, ণ, ন, শ, ষ, স, প্রভৃতি বর্ণ সম্বন্ধীয় নির্বাচিত শব্দতালিকা )।

৩। **পত্ররচনা ও অনুচ্ছেদ লিখন :**

(ক) পত্ররচনার সাধারণ নিয়ম। পিতা-মাতা-ভ্রাতা-ভগ্নী-বন্ধুর কাছে পত্র। ছুটিটির আবেদন। অনুষ্ঠানের আমন্ত্রণ পত্রাদি রচনা।

(খ) **অনুচ্ছেদ লিখনের জন্য পরিচীত বিষয় অবলম্বন।**

ব্যাকরণ ও পত্র / অনুচ্ছেদ লিখনের জন্য সাধুভাষায় রচিত একখানি গ্রন্থ। ব্যাকরণের জন্য অনুর্ধ্ব ৬৫ পৃষ্ঠা + অন্যান্য বিষয়ের জন্য ২৫ পৃষ্ঠা, আকার ২২" × ৩২" ( ১৬ )। টাইপ পাইকা। ২৪ এম্। বিস্তৃত অনুশীলন দিতে হইবে এবং তাহার জন্য মূল পাইকা টাইপ ব্যবহার করিতে হইবে।

৪। **সহায়ক পাঠের জন্য** একখানি গদ্য বা কবিতা পুস্তক থাকিবে। যে কোন একখানি মাত্র পড়ান হইবে। এই পুস্তকের আলোচ্য হইবে—ভারতে প্রচলিত ধর্ম ও সংস্কৃতির কথা, জাতীয় ভাবোদ্দীপক কাহিনী, নীতিমূলক গল্প, মহাপুরুষদের জীবনকথা প্রভৃতির একটি বিষয়। গ্রন্থের মোট পৃষ্ঠা সংখ্যা ৬৪। আকার ২২" × ৩২" ( ১৬ ) পাইকা টাইপ। ২৪ এম। আবশ্যিকবোধে চিত্রাদির জন্য ৮ পৃষ্ঠা অধিক থাকিতে পারে।

কবিতা পুস্তকটিতে বিভিন্ন কবির উপরিউক্ত ভাবের কবিতার প্রাধান্য থাকিবে।

৫। **মৌখিক বিষয় :** আবৃত্তি, পদ্য-গদ্য হইতে পাঠ, পরিচিত পরিবেশ ও ছাত্র-ছাত্রীর অভিজ্ঞতা সম্পর্কে প্রশ্নোত্তর।

## সপ্তম শ্রেণী

একটি পত্র—পূর্ণ সংখ্যা ১০০

(লেখ্য বিষয় ৯০ + মৌখিক ১০)

১। পাঠ্যগ্রন্থ	(ঘ) গদ্যাংশ	২০
	(খ) পদ্যাংশ	২০
২। ব্যাকরণ		২০
৩। প্রবন্ধ এবং পত্ররচনা বা গল্প লিখন		২০ (১২ + ৮)
৪। সহায়ক পাঠ		১০
৫। মৌখিক		১০
		<hr/> ১০০

১। গদ্যাংশ ও পদ্যাংশ সম্বলিত একটি পাঠ্যগ্রন্থ থাকিবে :

গদ্যাংশের জন্য ৫০ পৃষ্ঠা আর পদ্যাংশের জন্য ৩০ পৃষ্ঠা মোট ৮০ পৃষ্ঠার গ্রন্থ হইবে। গদ্যাংশের মধ্যে থাকিবে—

- (ক) নানান সাহিত্যিক বিষয়—প্রাকৃতিক দৃশ্য, গল্প, স্মৃতিচারণ, ভ্রমণ-কাহিনী প্রভৃতি।
- (খ) স্বদেশপ্রেমোদ্দীপক বিষয় (দেশীয় কৃষি, শিল্প-বাণিজ্যাদি ও জাতীয় গৌরব বিষয়ক রচনা) ;
- (গ) জাতীয় স্বাধীনতা-সংগ্রামীদের জীবনবৃত্তান্ত ও সংগ্রামের কথা (সর্বভারতীয় ভিত্তিতে মদ্যতঃ ঊনবিংশ শতক হইতে স্বাধীনতা লাভ পর্যন্ত সময়ের কথা) ;
- (ঘ) মহৎজীবন কথা (সর্বভারতীয় মহাপুরুষদিগের জীবন-বৃত্তান্ত)।
- (ঙ) বৈজ্ঞানিক আবিষ্কার ও অভিযান।
- (চ) একটি নাট্যাংশ।

পদ্যাংশের জন্য প্রসিদ্ধ কবিগণের বিভিন্ন ভাব ও ছন্দের কবিতা সংকলন করিতে হইবে।

গদ্যাংশে সাধু ও চলিত উভয় রীতির রচনা থাকা আবশ্যিক। প্রসিদ্ধ লেখকবর্গের রচনা সংকলিত হইবে। সংকলকের নিজস্ব রচনাও থাকিতে পারে। বিস্তৃত অনুশীলনী থাকিবে এবং অনুশীলনী ও চিত্রাদির জন্য অতিরিক্ত ৪ পৃষ্ঠা পর্যন্ত যোগ করা চলিবে। গ্রন্থের আকার ২২" × ৩২" (৮ ১/২)। টাইপ পাইকা ২৪ এম।

## ২। ব্যাকরণ পাঠ্যসূচী :

- (ক) পূর্ণাঙ্গ স্বর ও ব্যঞ্জন-সন্ধি (খাঁটি বাংলা শব্দের সন্ধি এবং প্রয়োজনীয় ও প্রচলিত বিসর্গ-সন্ধি ও নিপাতনে সন্ধি সন্ধিসহ)।
- (খ) স্ত্রী প্রত্যয় সহ পূর্ণাঙ্গ লিঙ্গবিচার।
- (গ) কারক ও বিভক্তির আলোচনা—এ, য, তে, কে, র, এর এবং বিভক্তি-চিহ্ন-লোপ (শূন্যতা)। বিভক্তির প্রথমা-দ্বিতীয়াদি নামকরণ না করিয়া কেবল কোন্ কোন্ ক্ষেত্রে কী-কী বিভক্তি চিহ্ন ব্যবহৃত হয় তাহাই দেখাইতে হইবে। বহু বচনের বিভক্তি চিহ্ন (চলিত ও সাধু)। বিশেষ্য ও সর্বনাম পদের শব্দরূপ। পদ ও শব্দের পার্থক্য।
- (ঘ) বাক্যের উদ্দেশ্য ও বিধের সম্বন্ধে আলোচনা।
- (ঙ) বিপরীতার্থক শব্দ।
- (চ) শুদ্ধ শব্দ লিখন।

## ৩। প্রবন্ধ এবং পত্র বা গল্প লিখন :

- (ক) প্রবন্ধরচনার বিধি ও কৌশল শিক্ষা। মূখ্যতঃ জীবনী-বিষয়ক, বর্ণনাত্মক ও তথ্যমূলক প্রবন্ধাদি রচনা।
- (খ) তথ্যমূলক ও ভাব-বিনিময়মূলক পত্ররচনা শিক্ষা।
- (গ) সরল গল্প রচনা।

(ব্যাকরণ ও প্রবন্ধ পুস্তকের পত্র সংখ্যা প্রভৃতি বিষয়ে “অষ্টম শ্রেণী” দ্রষ্টব্য)।



## ৪। সহায়ক পাঠ :

- (ক) ভারতের সংস্কৃতি ও ঐতিহ্য বিষয়ক রচনা (বেশভূষার বৈশিষ্ট্য, শিল্প-রুচি, স্থাপত্য, ভাস্কর্যাদি, আতিথেয়তা ও জীবসেবাদির আদর্শবিষয়ক)।
- (খ) ধর্ম-সমাজ-রাষ্ট্রনীতি ক্ষেত্রে খ্যাতনামা ভারতীয় শ্রেষ্ঠ মনীষী তথা মহাপুরুষদিগের জীবনবৃত্তান্ত।
- (গ) আত্মস্মৃতি, ভ্রমণ, বৈজ্ঞানিক আবিষ্কার ও অভিযানের কাহিনী।
- (ঘ) নানান সাহিত্যিক রচনা।
- (ঙ) পুরাণাদির গল্প ও চরিত্র।
- (চ) বাংলা মঙ্গলকাব্য ও গীতিকার কাহিনী ও চরিত্র—এই বিষয়গুণের একটি অবলম্বনে গদ্যগ্রন্থ রচিত হইবে। গদ্যের ভাষারীতি সাধু বা চলিত হইবে। অনুরূপ এক বা একাধিক বিষয়ের একটি কবিতা পদ্যস্বকও হইতে পারে। তবে গদ্য বা পদ্য একখানি পদ্যস্বকই পড়ান হইবে। গ্রন্থের আকার ২২"×৩২" (১৬)। টাইপ পাইকা। ২৪ এম্। গদ্য গ্রন্থের পৃষ্ঠা সংখ্যা ৮০, পদ্য গ্রন্থের ৬০।
- ৫। মৌখিক—আবৃত্তি, সাহিত্যপাঠ, বিবিধ অনুষ্ঠান সম্বন্ধে আলোচন, পরিচিত বিষয়ে প্রশ্নোত্তরদান।

## অষ্টম শ্রেণী

একটি পত্র—পূর্ণ সংখ্যা ১০০

(লেখ্য বিষয় ৯০+মৌখিক ১০)

১। পাঠ্যগ্রন্থ	(ক) গদ্যাংশ	২০
	(খ) পদ্যাংশ	২০
২। ব্যাকরণ		২০
৩। প্রবন্ধ এবং পত্রলিখন / গল্পরচনা		২০ (১২+৮)
৪। সহায়ক পাঠ		১০
৫। মৌখিক		১০
		<hr/> ১০০

## ১। গদ্যাংশ ও পদ্যাংশ সম্বলিত একখানি পাঠ্যপুস্তক থাকিবে :

বিষয়বস্তু সপ্তম শ্রেণীর অনুযায়ী, তদুপরি জাতীয় স্বাধীনতা সংগ্রামীদের জীবনী ও সংগ্রাম বিষয়ে রচনা থাকা বাঞ্ছনীয় ( পলাশীর যুদ্ধ; ‘সিপাহী বিদ্রোহ’ এবং উহা হইতে ১৯০০ খৃষ্টাব্দ পর্যন্ত সময়কাল ঘটনাবলী অবলম্বনীয় )। গদ্য ও পদ্যের মান পূর্বাপেক্ষা উচ্চতর হইবে। গদ্যাংশে সাধু ও চলিত উভয় রীতিরই রচনা থাকিবে। পাঠ্যগদ্য লিখকগণের রচনা হইতে সংকলিত হইবে। সংকলকের নিজস্ব রচনাও থাকিতে পারে। পাঠ্যগদ্য যেন নাতিদীর্ঘ হয়। বিস্তৃত অনুশীলনী থাকা বাঞ্ছনীয়।

গ্রন্থের আকার ২২"×৩২" (১১) টাইপ পাইকা। ২৪ এম্. পৃষ্ঠা গদ্যাংশের জন্য ৬৫+পদ্যাংশের জন্য ৩৫, মোট ১০০। অনুশীলনীর জন্য অতিরিক্ত ৫ পৃষ্ঠা যোগ করা চলিবে।

## ২। ব্যাকরণ সূচী :

- (ক) বিশেষ্য, বিশেষণ ও সর্বনামের পূর্ণাঙ্গ পরিচয় দান।
- (খ) বিভিন্ন শ্রেণীর অব্যয়ের সাধারণ পরিচয় দান।
- (গ) ক্রিয়ার কাল সম্বন্ধে আলোচনা।
- (ঘ) প্রত্যয় : কয়েকটি কৃৎপ্রত্যয়—( সংস্কৃত : ঘঞ্ (অ), অনট্ (অন), ক্তি (তি), ক্ত (ত), অক্, তব্য, অনীয়, য। বাংলা—অন, আ, আই, ইয়া-ইয়ে উয়া-ও, উক। কয়েকটি তদ্ভিত প্রত্যয়—( তা, ত্ব, ষ (অ), ষ্য (য), তর, তম, ঈয়স্, ইষ্ট। বাংলা—আই, আনি, আমি (মি), টিয়া-টে, খানা, পনা )।
- (ঙ) প্রধান প্রধান সমাসের সাধারণ পরিচয়।
- (চ) বিশেষণের তারতম্য।
- (ছ) কতৃবাচ্য, কর্মবাচ্য ও ভাববাচ্য। বাচ্য পরিবর্তন।
- (জ) পদ-পরিবর্তন। বিশিষ্টার্থে বিশেষ্য ও বিশেষণের প্রয়োগ।
- (ঝ) শুদ্ধ শব্দ লিখন।

### ৩। প্রবন্ধ এবং পত্রলিখন / গল্প রচনা :

- (ক) আত্মকাহিনী, স্থান, ঘটনা ও নিসর্গের বর্ণনা, ছাত্রজীবনের বিবিধ অভিজ্ঞতা, নীতি ও আদর্শ, বৈজ্ঞানিক আবিষ্কার ও শিল্পবার্ণাজ্য বিষয়ক প্রবন্ধ।
- (খ) বন্ধু-বান্ধবের সহিত ভাবাবিনিময়, পত্রাকারে কোন বিশেষ বিষয়ে আলোচনা।
- (গ) নীতিগত ও মানবিকতার পরিচয়মূলক গল্পরচনা।

### ৪। সহায়ক পাঠ :

গ্রন্থের বিষয়বস্তু, ভাষারীতি, আকার, টাইপ ইত্যাদি সপ্তম শ্রেণীর পুস্তকের অনুরূপ হইবে। কেবল পৃষ্ঠাসংখ্যা গল্পের ক্ষেত্রে ১০০ ও পদ্যের ক্ষেত্রে ৭০ হইবে।

৫। মৌখিক পরীক্ষা—আবৃত্তি, সাহিত্য পাঠ, অনুষ্ঠানাদি সম্বন্ধে আলোচনা বা প্রশ্নোত্তরদান।

সপ্তম ও অষ্টম শ্রেণীর জন্য রচিত ব্যাকরণ একত্রে  $(১০০ + ১০০) = ২০০$  পৃষ্ঠার মধ্যে অথবা পৃথক-পৃথক ভাবে ১০০ পৃষ্ঠার মধ্যে প্রকাশ করা যাইতে পারে। আকার ২২" × ৩২" (১১/৮)। টাইপ পাইকা। ২৪ এম্। বিস্তৃত অনুশীলনী থাকা বাঞ্ছনীয়। ইহার জন্য অতিরিক্ত ৮ পৃষ্ঠা যোগ করা চলিবে।

প্রবন্ধ, পত্র ও গল্প লিখনের পদ্ধতি বিষয়ে দুই শ্রেণীর জন্য একখানি গ্রন্থ থাকিতে পারে। ঐ গ্রন্থে প্রবন্ধ লিখন বিষয়ে পর্যাপ্ত সংকেত থাকা আবশ্যিক। আকার টাইপ ইত্যাদি ব্যাকরণ গ্রন্থের মত এবং পৃষ্ঠা সংখ্যা  $(১০০ + ১০০) = ২০০$ ।

## নবম ও দশম শ্রেণী

১। নিয়মিত ( রেগুলার ) পরীক্ষার্থীদের জন্য :

লেখ্য বিষয় ( প্রথম ও দ্বিতীয় পত্র )	...	৯০ + ৯০ = ১৮০
মৌখিক	...	২০
		<hr/> ২০০

(ক) প্রথম পত্র ( লেখ্য বিষয় ) : ৯০

১। পদ্যাংশ	...	৪০
২। প্রবন্ধ	...	২০
৩। ইংরাজী হইতে বঙ্গানুবাদ	...	১০
৪। ভাবসংপ্রসারণ / সারাংশ	...	১০
৫। পদ্যসহায়ক পাঠ থেকে লেখ্য প্রশ্ন	...	১০
		<hr/> ৯০

(খ) দ্বিতীয় পত্র ( লেখ্য বিষয় ) : ৯০

১। গদ্যাংশ	...	৪৫
২। পাঠ্যবিষয়গত ব্যাকরণ	...	১০
৩। ব্যাকরণ	...	২৫
৪। গদ্যসহায়ক-পাঠ থেকে লেখ্য প্রশ্ন	...	১০
		<hr/> ৯০

(গ) মৌখিক : ২০

১। আবৃত্তি	...	৮
২। পাঠ	...	৬
৩। পদ্য সহায়ক পাঠ থেকে একটি প্রশ্ন )	...	৩ + ৩ = ৬
গদ্য সহায়ক-পাঠ থেকে একটি প্রশ্ন )		<hr/> ২০



## ২। এক্স্টারনাল ( বিদ্যালয় বহির্ভূত ) পরীক্ষার্থীদের জন্য

(ক) প্রথম পত্র : পূর্ণমান ১০০

১। পদ্যাংশ	...	৫০
২। প্রবন্ধ	...	২০
৩। ইংরাজী হইতে বঙ্গানুবাদ	...	১০
৪। ভাব-সম্প্রসারণ এবং সারাংশ	...	১০
৫। পদ্য সহায়ক-পাঠ থেকে লেখ্য প্রশ্ন	...	১০
		<hr/> ১০০

(খ) দ্বিতীয় পত্র : পূর্ণমান ১০০

১। গদ্যাংশ	...	৫০
২। পাঠ্যবিষয়গত ব্যাকরণ	...	১৫
৩। ব্যাকরণ	...	২৫
৪। গদ্য সহায়ক-পাঠ থেকে লেখ্য প্রশ্ন	...	১০
		<hr/> ১০০

## ১। পাঠ্যগ্রন্থ—পাঠ সংকলন ( নব সংস্করণ )

মধ্যশিক্ষা পর্বদের পক্ষে বিশ্বভারতী কর্তৃক প্রকাশিত।

—নির্বাচিত অংশ—

নবম শ্রেণী ( ১৯৭৯ )

## গদ্যাংশ

১। সমুদ্রপথে	...	হরপ্রসাদ শাস্ত্রী
২। ভানুসিংহের পত্র	...	রবীন্দ্রনাথ ঠাকুর
৩। মেজদা	...	শরৎচন্দ্র চট্টোপাধ্যায়
৪। জুই পাস্তুর	...	চারুচন্দ্র ভট্টাচার্য
৫। অচেনার আনন্দ	...	বিহুতিভূষণ বন্দ্যোপাধ্যায়

## পদ্যাংশ

১।	খীরামের অগ্রিমদুনির আশ্রম গমন ...	কৃষ্ণিবাস
২।	মধ্যাহ্নে ...	অক্ষয়কুমার বড়াল
৩।	পদ্মরাতন ভূতা ...	রবীন্দ্রনাথ ঠাকুর
৪।	ত্রিরত্ন ...	কালিদাস রায়
৫।	হাট ...	যতীন্দ্রনাথ সেনগুপ্ত

## দশম শ্রেণী ( ১৯৮০ )

## পদ্যাংশ

১।	হিমালয় ভ্রমণ ...	দেবেন্দ্রনাথ ঠাকুর
২।	সাগরসঙ্গমে নবকুমার ...	বঙ্কিমচন্দ্র চট্টোপাধ্যায়
৩।	আশ্রমের রূপ ও বিকাশ ...	রবীন্দ্রনাথ ঠাকুর
৪।	বাস্পাদিত্য ...	অবনীন্দ্রনাথ ঠাকুর
৫।	ঈশ্বরচন্দ্র বিদ্যাসাগর ...	রামেন্দ্র সুন্দর ত্রিবেদী

## পদ্যাংশ

১।	দুর্যোধনের প্রতি ধৃতরাষ্ট্র ...	কাশীরাম দাস
২।	ইন্দ্রজিতের যজ্ঞস্থলে লক্ষ্মণ ...	মাইকেল মধুসূদন দত্ত
৩।	ধূলোমন্দির ...	রবীন্দ্রনাথ ঠাকুর
৪।	কাল-ঈশাখী ...	মোহিতলাল মজুমদার
৫।	কাণ্ডারী হুঁশিয়ার ...	কাজী নজরুল ইসলাম

২। সহায়ক পাঠ : ( ১৯৮২ সালের মাধ্যমিক পরীক্ষা হইতে )

### নবম ও দশম শ্রেণী

যে কোন একটি গদ্য ও যে কোন একটি কাব্যগ্রন্থ, মোট দুটি গ্রন্থের  
নিম্নলিখিত নির্বাচিত অংশ :

গদ্যগ্রন্থ :

১। গল্পগুচ্ছ ( গল্প সংকলন )—রবীন্দ্রনাথের ছোট গল্পের নির্বাচিত  
সংকলন।

নবম শ্রেণী—দেনা পাওনা, রামকানাইয়ের নিবন্ধিতা, কাবুলিওয়ালার  
অনিধিকার প্রবেশ, অতিথি।

দশম শ্রেণী—ছদ্ম, দান-প্রতিদান, সম্পত্তি-সমর্পণ, গল্পগুচ্ছ, ঠাকুরদা।

২। পদার্থবিদ্যার নবম—চারুচন্দ্র ভট্টাচার্য।

নবম শ্রেণী—প্রথম সাতটি প্রবন্ধ ( ‘পূর্ব কথা’ থেকে ‘অ্যাটমের গঠন’  
পর্যন্ত )

দশম শ্রেণী—শেষ আটটি প্রবন্ধ ( ‘আইসোটোপ’ থেকে ‘আপেক্ষিকতাবাদ’  
পর্যন্ত )

কাব্যগ্রন্থ :

১। কথা ও কাহিনী—রবীন্দ্রনাথ ঠাকুর

নবম শ্রেণী—প্রতিনিধি, মস্তকবিক্রয়, মূল্যপ্রাপ্তি, স্পর্শমণি, বন্দীবীর,  
মানী, প্রার্থনাতীত দান, নকলগড়, পণরক্ষা, পুরাতন ভূত।

দশম শ্রেণী—শ্রেষ্ঠ শিক্ষা, পুজারিনী, নগরলক্ষ্মী, বিচারক, গানভঙ্গ,  
সামান্য ক্ষতি, দেবতার গ্রাস, নিষ্ফল উপহার, বিসর্জন, জুতা  
আবিষ্কার।

মুখস্থ করার জন্য :

নবম শ্রেণী—স্পর্শমণি, বন্দীবীর, পুরাতন ভূত, মূল্যপ্রাপ্তি, নকলগড়।

দশম শ্রেণী—পুজারিনী, নগরলক্ষ্মী, দেবতার গ্রাস, সামান্য ক্ষতি,  
গানভঙ্গ।

২। কবিতা সংকলন—পর্ষদের পক্ষে বিশ্বভারতী কর্তৃক প্রকাশিত।

নবম শ্রেণী—ভারতবিলাপ, ধাত্রী পান্না, অশোকতরু, দুর্ভাগা দেশ, তা  
বটেই তো তা বটেই তো, সুখ, মা (রজনীকান্ত সেন),  
সাগরতর্পণ, ডাক হরকরা, রথযাত্রা।

দশম শ্রেণী—সীতা ও সরমা, কীর্তিনাশা, অশোক, ওরা কাজ করে, শারদীয়  
বোধন, সিংহগড়, আবছায়ায়, গদ্য ও পদ্য, চাঁদ সদাগর,  
ছাত্রদলের গান।

অদৃষ্ট করার জন্য :

নবম শ্রেণী—ভারত বিলাপ, দুর্ভাগা দেশ, তা বটেই তো তা বটেই তো,  
সাগরতর্পণ

দশম শ্রেণী—কীর্তিনাশা, ওরা কাজ করে, সিংহগড়, গদ্য ও পদ্য, ছাত্রদলের  
গান।

বিঃ দ্রঃ—সহায়ক গ্রন্থের আখ্যান, ঘটনা, বর্ণনা, ভাববস্তু ইত্যাদি  
সম্বন্ধে ছাত্রছাত্রীদের সাধারণ পরিচয় মাত্র প্রয়োজন।

৩। দ্বিতীয় পত্রের ব্যাকরণের পাঠসূচী :

### নবম শ্রেণী

(সপ্তম-অষ্টম শ্রেণীতে অধীত বিষয়ের পুনরালোচনা প্রয়োজনীয়)

(ক) : বর্ণের শ্রেণী বিভাগ : বাংলা স্বর ও ব্যঞ্জনবর্ণের উচ্চারণ স্থান ও  
উচ্চারণ বৈশিষ্ট্য, একই বর্ণের বিভিন্ন ধ্বনি, বিভিন্ন বর্ণের একই ধ্বনি,  
ধ্বনি বিলোপ ইত্যাদি। বিদেশী শব্দের বাংলা বর্ণীকরণ।

(খ) সাধু ও চলিত ভাষারীতির পূর্ণাঙ্গ আলোচনা।

(গ) ক্রিয়া পদ ও ক্রিয়া বিভক্তির সম্বন্ধে পূর্ণাঙ্গ আলোচনা। ধাতু ও  
প্রত্যয়—মৌলিক ধাতু, প্রযোজক ধাতু, ধন্যাত্মক ধাতু, নাম ধাতু।  
অকর্মক ও সক্রমক ক্রিয়া। সমাপিকা ও অসমাপিকা ক্রিয়া, মৌলিক



ক্রিয়া ও যৌগিক ক্রিয়া । ক্রিয়ার ভাব ও ক্রিয়ার কাল (বিশেষ আলোচনা) । ক্রিয়ার রূপ ।

(ঘ) অব্যয়ের পূর্ণাঙ্গ আলোচনা (শ্রেণী-বিভাগ ও বিভিন্ন সূক্ষ্ম অর্থে প্রয়োগ) ।

(ঙ) পূর্ণাঙ্গ কৃৎ প্রত্যয় : সংস্কৃত শত্ (অং), শানচ্ (মান), গক্ (অক) । তৃচ্ (তা), ইষ্ক্, আল্ । বাংলা—অ, অন, আও, উ, উনি, ত (অত, অতা), তি (অতি) না, রি (আরি, উরি) ।

পূর্ণাঙ্গ তদ্ধিত প্রত্যয় : সংস্কৃত ঞ্জি (ই), ঞ্জয় (এয়), ঞ্জায়ণ (আয়ন), ঞ্জীয় (ঈয়), ঞ্জিক (ইক), ইত, ইল, ইন, ঈন, বিন, ময়, মতুপ্-বতুপ্ (মান্-বান্), তন, ইমন্, র, ল । বাংলা আমি (মি), আর, আরি, আরদ্, ই, ইয়া (এ), ঈ, উয়া (উ), উক্, টিয়া (টে), পারা, পানা, খানা, বস্ত, মন্ত । বিদেশী—আনা, আনি, ওয়ালা, ওয়ান, খানা, খোর, গর, চি, দান, দানি, দার, গিরি, নবিশ, বাজ ।

(চ) পূর্ণাঙ্গ উপসর্গ (সংস্কৃত, বাংলা ও বিদেশী) । অনুসর্গ (দ্বারা, দিয়া, হইতে, থেকে, চেয়ে, মধ্যে প্রভৃতি) ।

(ছ) বিভিন্নার্থে বিশেষ্য ও বিশিষ্টার্থে বিশেষণ এবং ক্রিয়াপদের প্রয়োগ । একই শব্দের বিভিন্ন পদে প্রয়োগ । ভিন্নার্থক সদৃশ ও প্রায় সমোচ্চারিত শব্দ ।

(জ) ইংরাজী হইতে বাংলায় অনুবাদ শিক্ষা (বাক্য অনুসারে অনুবাদ দেখাইয়া ক্রমে অ-দুচ্ছেদে অভ্যস্ত করাইতে হইবে) ।

### দশম শ্রেণী

(ক) সমাস—বিস্তৃতর আলোচনা ।

(খ) বাংলার শব্দভাণ্ডার । বাংলা শব্দের শ্রেণীবিন্যাস (তৎসম, তদ্ভব, দেশী ও বিদেশী) ।

(গ) ধন্যাত্মক শব্দ । শব্দদ্বৈত ।

- (ঘ) বাক্য-স্বত্ব পূর্ণাঙ্গ আলোচনা। বাক্যের প্রকার ভেদ। সরল জটিল, যৌগিক। অস্বার্থক, নাস্বার্থক, নির্দেশক, প্রশ্নবোধক। বাক্যান্তরীকরণ।
- (ঙ) শব্দ ও বাক্যাংশের বিশেষ অর্থে প্রয়োগ। প্রবাদ-প্রবচনাদি।
- (চ) বাক্য-প্রসারণ। বহুপদের একপদে পরিণত করণ। শব্দ ও বাক্যগত শৃঙ্খল-অশৃঙ্খল বিচার।

নবম ও দশম শ্রেণীর জন্য মিলিত একটি ব্যাকরণ গ্রন্থ থাকিতে পারে।  
 পৃষ্ঠাসংখ্যা  $(100 + 100) = 200$ । আকার “ $22 \times 32$ ” (১৬)।  
 টাইপ স্মল পাইকা। ২৪ এম্। বিস্তৃত অনুশীলনী থাকিবে এবং  
 তাহার জন্য অতিরিক্ত ৮ পৃষ্ঠা সংযোজিত হইতে পারে :

৪। প্রবন্ধ, বঙ্গানুবাদ, সারাংশ, ভাবসংপ্রসারণ : পাঠ্য-বহির্ভূত অংশ হইতে প্রশ্ন করা হইবে। প্রবন্ধপুস্তকে পূর্ণাঙ্গ প্রবন্ধের দৃষ্টান্ত অপেক্ষা পর্যাপ্ত প্রবন্ধের সংকেত দেওয়ার উপর গুরুত্ব দিষ্ট হইবে।

এই সকল বিষয়ের জন্য আনুমানিক ২০০ পৃষ্ঠার পূর্বোক্ত আকার ও টাইপের একটি গ্রন্থ নবম ও দশম শ্রেণীর জন্য রচিত হইতে পারে।

৫। মৌখিক :—পদ্য বিষয়ক সহায়ক পাঠ্য থেকে আবৃত্তি, গদ্য বিষয়ক সহায়ক পাঠ্যের অংশ-বিষয়ক পাঠ্য, দুইটি সহায়ক পাঠ্য থেকে একটি হিসেবে স্নোট দুইটি মৌখিক প্রশ্ন।

**(2) ENGLISH FIRST LANGUAGE****CLASSES VI, VII & VIII**

Schools may select a graded series of readers for detailed and non-detailed study in different classes. A suitable book of Grammar should also be recommended to students. The distribution of marks as laid down for Bengali First Language should be followed.

**CLASSES IX & X**

(i) Distribution of marks for Regular Candidates of the Board's Madhyamik Pariksha from 1982 onwards :

Written paper I 90, paper II 90, Oral 20 = 200

**Paper I ( 90 marks )**

prose Text	...	50
Poetry Text	...	30
Questions from the text for General Reading under item B (a)	...	10
		<hr/> 90

**Paper II ( 90 marks )**

Essay	...	20
Substance or Precis	...	15
Comprehension Test	...	15
Expansion	...	10
Questions on Grammar & Composition connected with a passage	...	20
Questions from the text prescribed for General Reading under item B(b)	...	10
		<hr/> 90

**Oral Test ( 20 marks )**

Texts prescribed for General Reading (5+5)...	10
Recitation. Loud Reading & Conversation ...	10
(ii) Distribution of marks for External Candidates :	20

[From 1982]

Written Paper I 100, Paper II 100 = 200

**Paper I (100 marks)**

Prose Text	...	55
Poetry Text	...	35
Questions from the Text for General Reading under item B (a)		10
		<hr/> 100

**Paper II [ 100 marks ]**

1. Essay	...	25
2. [a] Substance or Precis	...	15
[b] Comprehension test	...	20
[c] Expansion	...	10
3. Questions on Grammar and Composition connected with a passage	...	20
4. Questions from the text for General Reading under item B(b) 2		10
		<hr/> 100



## SYLLABUS

For Madhyamik Pariksha, 1978 onwards

### Paper I

A Detailed Study

#### PROSE

1. Silas Marner : George Eliot (Herbert Strang's Library)  
Oxford University Press

#### VERSE

2. Selections from English Verse, First Edition [Revised]  
published by the West Bengal Board of Secondary Education.

#### Pieces Prescribed

(If not otherwise notified)

1. Blow, Blow, Thou Winter  
Wind ... William Shakespeare
2. On His Blindness ... John Milton
3. The Elegy ... Thomas Gray
4. The Tiger ... William Blake
5. On Milton ... William Wordsworth
6. The Solitary Reaper ... William Wordsworth
7. The Light of Other Days Thomas Moore
8. To A Skylark ... Percy Bysshe Shelley
9. On First Looking into  
Chapman's Homer ... John Keats
10. To Autumn ... John Keats
11. Lead Kindly Light ... Cardinal Newman
12. The Slave's Dream ... Henry Wadsworth Longfellow
13. Ulysses ... Lord Tennyson

- |     |   |     |                       |
|-----|---|-----|-----------------------|
| 14. | The Patriot                             | ... | Robert Browning       |
| 15. | Say Not the Struggle<br>Naught Availeth | ... | Arthur Hugh Clough    |
| 16. | I Vow To Thee, My<br>Country            | ... | Sir Cecil Spring-Rice |
| 17. | An Acre Of Grass                        | ... | William Butler Yeats  |
| 18. | Sea-Fever                               | ... | John Masefield        |
| 19. | The Snare                               | ... | James Stephens        |
| 20. | The Soldier                             | ... | Rupert Brooke         |

### B. For General Reading

- (a) Letters from a Father  
to His Daughter ... Jawaharlal Nehru  
Or  
Born Free ... J. Adamson
- (b) Modern English Short Stories, Second Series (The world's Classics Series, selected by Derek Hudson, published by Oxford University Press).

The following stories are prescribed for study :

- |                                      |     |                     |
|--------------------------------------|-----|---------------------|
| The Kite                             | ... | W. Somerset Maugham |
| The Little Willow                    | ... | Frances Towers      |
| The Hostage                          | ... | C.S. Forester       |
| On Guard                             | ... | Evelyn Waugh        |
| The Basement Room                    | ... | Graham Greene       |
| The Putting Away of<br>Uncle Quaggin | ... | Nigel Kneale        |
| Maria                                | ... | Elizabeth Bowen     |
| A Dream of Winter                    | ... | Rosamond Lehmann    |

**Paper—II**

1. Essay
2. (a) Substance or Precis  
(b) Comprehension Test  
(c) Expansion
3. Question on Grammar and Composition connected with a passage.

Question under item 3 will include some or all of the following :—

- (i) Explanation of words in relation to the context.
- (ii) Rewriting or explanations of phrases or sentences.
- (iii) Turning of narration (Direct or Indirect).
- (iv) Recognition, understanding and use of metaphor and simile.
- (v) Synthesis and exercise in sentence construction.

## (३) हिन्दी

( प्रथम भाषा )

षष्ठ—कक्षा

१—अंकों का वितरण :

पूर्णांक	...	१००
गद्य (पाठ)	...	३०
पद्य (पाठ)	...	२०
व्याकरण	...	१५
रचना	...	१५
अनुषंगिक अध्ययन	...	१०
मौखिक	...	१०

२—विषय का स्वरूप :

गद्य—प्रस्तावित संकलन में रोचक लघु कहानी, वर्णनात्मक लघु निबन्ध, 'यात्रा विवरण, संस्मरण, जीवनी, वैज्ञानिक, आविष्कार संबंधी रचनाएँ, नीति तथा समाज विषयक उपाख्यान अथवा निबन्ध, स्वदेश-प्रेम संबंधी लघु रचनाएँ आदि संगृहीत होंगी। रचनाएँ बालोपयोगी, जीवनोपयोगी तथा साहित्योपयोगी हों, जिनसे किशोरजीवन तथा व्यक्तित्व के सम्यक निर्माण में सहायता पहुँचे। प्रसिद्ध एवं मान्य लेखकों की रचनाएँ ही संकलित की जाएँ। अनूदित रचनाएँ यथासंभव नहीं ली जाएँ। प्रायः सभी रचनाएँ खड़ीबोली की हों तथा संकलित रचनाओं की भाषा शैली, वाक्य रचना तथा शब्द-विधान सरल एवं सुपाठ्य हों। प्रत्येक पाठ में अनुशीलनी का होना अनिवार्य।



है, जो विद्यार्थियों को क्षमता और ग्राह्यशक्ति को उद्बुद्ध करने में सहायक हो। आवश्यकतानुसार आकर्षक चित्रों के भी अपयोग किए जाएं।

पद्य—मध्ययुगीन कवियों में कबीर, तुलसी, रहीम, बृन्द आदि के चरित्र—निर्माणक सरल दोहे संकलित किए जाएँ, जिनमें प्रत्येक की संख्या १५ से अधिक न हों। आधुनिक कवियों की सरल एवं अभिधामूलक रचनाएँ संकलित हों, जो चालोपयोगी हों। रचनाएँ अनूदित न हों। कुछ नाम द्रष्टव्य हैं। मैथिलीशरण गुप्त, सोहनलाल द्विवेदी, रामनरेश त्रिपाठी, सियारामशरण गुप्त। कविताएँ देश-प्रेम, प्रकृति वर्णन, चरित्र-निर्माण, पौराणिकसांस्कृतिक भावनाओं से संबन्धित हों। प्रत्येक पाठ में अनुशीलनी आवश्यक है तथा आकर्षक चित्र भी प्रसंगानुकूल दिए जाएँ।

पुस्तक का आकार तथा पाठ संख्या :

पुस्तक २२—३२ (१/१६) साइज की हो। इण्डियन स्टैण्डर्ड इन्स्टीट्यूट द्वारा प्रस्तुत मुद्रण का ही प्रयोग किया जाए। गद्यभाग की पृष्ठ संख्या ४४ तथा पद्य—भाग की २० होगी, जिनमें १२ गद्य-पाठ तथा १२ पद्य-पाठ समाहित हो सकें।

व्याकरण :

वर्ण-परिचय शब्द और उसके भेद, संज्ञा, सर्वनाम, विशेषण, क्रिया और अव्यय के स्वरूप एवं मुख्य भेदों का सामान्य परिचय, कारक लिंग और वचन का सामान्य परिचय, विराम चिह्नों का प्रयोग।  
पृष्ठ—संख्या—१०।

रचना :—

पत्र—लेखन, लघु निबन्ध (सामान्य, सरल प्रचलित एवं परिचित विषयों पर लेख) । पृष्ठ—संख्या—४० ।

अनुषंगिक अध्ययन-ग्रन्थ (रेपिड, रीडर) :—

बाल-कथाओं का संकलन किया जाए, जिनमें पौराणिक, ऐतिहासिक तथा राष्ट्रीय विषयों से सम्बद्ध आख्यान हों । पृष्ठ—संख्या—४८ और पाठ संख्या १२ से अधिक नहों ।

## CLASSES VII & VIII

### A. Distribution of Marks for Classes VII & VIII

#### One paper (100 marks)

Prose Text	...	25
Poetry Text	...	20
Supplementary Reader	...	15
Grammar & Composition	...	15
Essay	...	15
Oral	...	10
		<hr/> 100

### B. Syllabus for Class VII

(i) A Text Book containing Prose and Poetry pieces (of the size of 22"×32" (1/16), printed in the types approved by Indian Standard Institute, may be prescribed.

Pages for Prose Text should be 60 and for the Poetry should be 50.

The Prose Text should contain biographical, reflective, mythological, cultural, educational, moral and social pieces.

The Poetry Text should contain poems of Kabir, Rahim Mirabai, Giridhar Kaviray, Gopal Sharan Singh, Rai Debi-prasad, Subhadra Kumari Chauhan and others.

(ii) A Supplementary Reader should contain topics on national, cultural, historical and literary aspects (Pages : 100-125). The prescribed Supplementary Reader is **BANGAL (BHARAT DARSHAN SERIES)**—Published by Rajpal and Sons, Delhi.

### GRAMMAR & COMPOSITION

In addition to the revision of topics on Grammar already done in Class VI the following topics are prescribed :—

Sandhis, Tenses, Persons, Parts of Speech, Sentence-Structure, Classification of sentences and their relationship, Synonyms and Antonyms ; Paragraph-writing ; simple story-writing from hints.

### ESSAY-WRITING

Essays should include common descriptive and narrative topics.

### C. Syllabus for Class VIII

(i) A combined Text Book containing Prose and Poetry pieces should be prescribed. Prose pieces should contain educative and literary articles preferably by writers like Premchand, Kaushik, Sudarshan, Jagannath Prasad, Jaisankar Prasad, Gobinda Ballabh Pant, Lakshminarayan Mishra, Bharatendu Harishchandra, Dr. Raghubir Singh and others.

Poetry Text should contain poems of Vihari, Ghananand. Gayaprosad Sukla, Pant, Nirala, Mahadevi, Dinkar and others.



Prose Text should contain 100 pages and Poetry Text should contain 50 pages. Size of the book 22" x 32" (1/16). type approved by Indian Standard Institute.

(ii) A supplementary Reader should contain articles which will inspire students in national, historical, reflective, mythological and cultural aspects. The prescribed Supplementary Reader is SRI ARAVINDA GATHA (HINDI) published by Sri Arvind Ashram, Calcutta.

### GRAMMAR & COMPOSITION

In addition to the revision of topics on Grammar already done in class VII, the following topics are prescribed :—

Voice, Samasa, Transformation of Sentences, change of Voice, words having different meanings ; Synonyms, use of phrases and Idioms and Compound Words, Amplification, Central Idea, Summary & Substance-writing.

### ESSAY-WRITING

Students should develop the habit of writing essays independently. Topics should include everyday life, travels, discoveries, biographies etc. of juvenile interest.

### CLASSES IX & X

#### A. Distribution of marks for Regular Candidates :—

I— First Paper		Marks
Poetry Text		50
Essay		20
Amplification and Substance writing		10
Alankara and Chhanda		10
		<hr/> 90



**II—Second Paper**

Prose Text	45
History of Hindi Literature	20
Grammar and Composition	15
Questions from the Supplementary Reader	10
	<hr/>
	90

**III—Oral**

Text for Supplementary Readers	10
Recitation, Loud Reading & Conversation etc.	10
	<hr/>
	20

**B. Distribution of marks for External candidates :—****Paper—I**

	Marks
Poetry—	60
Essay	20
Amplification & Substance writing	10
Alankara & Chhanda	10
	<hr/>
	100

**Paper—II**

	Marks
Prose Text	55
History of Hindi Literature	20
Grammar & Composition	15
Questions from Supplementary Readers	10
	<hr/>
	100

### C. विषय का स्वरूप ( Syllabus ) :

पद्य एवं गद्य के लिए पृथक्-पृथक् पाठ्य-ग्रन्थ अपेक्षित हैं। माध्यमिक शिक्षा-परीक्षा को इन पाठ्य-ग्रन्थों के विचारार्थ एवं निर्धारणार्थ विभिन्न प्रकाशकों से ग्रन्थ आमंत्रित कर (यदि वह स्वयं प्रकाशन करने की स्थिति में न हो तो) सर्वोत्तम ग्रन्थ का चुनाव करना चाहिए। स्वीकृत ग्रन्थ के प्रकाशक से अनुबंध के द्वारा कागज एवं मूल्य-निर्धारण, आकार, सुद्रण आदि निश्चित करना चाहिए, जिससे भविष्य में कोई अनपेक्षित परिवर्तन न हो।

कक्षा नवम् एवं दशम्

प्रथम पत्र :—

पद्य : पुस्तक में छात्रों के व्यक्तित्व और साहित्यिक विकास एवं प्रतिभा के उन्नयन के लिए उपयुक्त प्रसिद्ध एवं प्रतिनिधि कवियों की वे रचनाएँ संगृहीत हों, जो हिन्दी काव्य के विभिन्न कालों, प्रवृत्तियों पर विहंगम, किन्तु सार्थक और उचित, प्रकाश डाल, सकें और छात्रों में साहित्यिक एवम् काव्यात्मक चेतना और अभिरूचि के साथ साथ सर्जनात्मक संवेदन स्फूर्त करने में सहायक हों।

इन कक्षाओं के निमित्त संकलित काव्य-पाठ उच्चतर महाविद्यालयीन अध्ययन के साथ समजित और संश्लिष्ट हों, जिससे हिन्दी साहित्य के अध्ययन के विभिन्न शैक्षणिक स्तर समायोजित रहें। ग्रन्थ के १६० पृष्ठों में कम से कम २० कवियों की रचनाएँ संकलित हों, जिनसे पाठ्य-क्रम में आवश्यक-तानुसार निर्धारण और निर्वाचन किया जा सके। संकलन में निम्नलिखित कवियों के समावेश का सुभाव दिया जाता है :

कबीर, तुलसी, सूर, मीरा, रसखानि, विहारी, भूषण, भारतेन्दु, मैथिली-शरण गुप्त, हरिऔध, प्रसाद, पंत, निराला, महादेवी, एक भारतीय आत्मा,

दिनकर वच्चन, अज्ञेय, केदारनाथ अग्रवाल, शमशेर बहादुर सिंह, भवानी-प्रसाद मिश्र आदि ।

पुस्तक के अंत में प्रत्येक पाठ की उचित और परीक्षोपयोगी अनुशीलनी (कवि परिचय के साथ) एवं प्रारम्भमेंपरिचयात्मक भूमिका अवश्य हो । पुस्तक का मुद्रण २२-३२ (१-१६) के आकार में इंडियन स्टैण्डर्ड इन्स्टीट्यूट द्वारा प्रस्तुत टाइप में हो । आवश्यक, पर आकर्षक और सुन्दर, चित्रों का समावेश अपेक्षित है ।

निबन्ध-लेखन, भाव-विस्तार एवं सार-लेखन, तथा अलंकार एवं छन्द :—

निबन्ध-लेखन, भाव विस्तार एवं सार-लेखन तथा अलंकार एवं छन्द के लिए एक पुस्तक निर्धारित रहेंगी ।

निबन्ध-सार, विषयप्रधान एवं स्पष्ट हों । कुछ वैयक्तिक तथा भावात्मक निबन्ध भी रखे जा सकते हैं । निबन्ध छात्रों के सामान्य पाठ्य-स्तर के अनुरूप विविध प्रकार के हों । भाव-विस्तार तथा सारलेखन के लिए पद्य एवं गद्य के अवतरण दिए जाएँ ।

निम्नलिखित अलंकार पाठ्यक्रम में निर्धारित हैं :—

अनुप्रास, यमक, श्लेष, उपमा, रूपक, उत्प्रेक्षा, और अर्थान्तरन्यास ।

निम्नलिखित छन्द निर्धारित हैं :—

दोहा, सोरठा, चोपाई, रोला, छप्पय, हरिगीतिका, मालिनी ।

द्वितीय पत्र :—

गद्य :—

पुस्तक में प्रसिद्ध लेखकों द्वारा लिखित लघु-कहानियाँ, निबन्ध (साहित्यिक समीक्षात्मक, वैज्ञानिक), रेखा-चित्र एवं संस्मरण, एकांकी, यात्रा-वृत्तान्त आदि का संकलन गद्य की विविध विधाओं की प्रस्तुति के उद्देश्य से



किया जाये। सभी पाठ खड़ीबोली में हो। पुस्तक में कम से कम तीन-चार कहानियां चार-पाँच निबन्ध, तथा एकाँकी के अतिरिक्त अन्यान्य रचनाएँ हों।

निम्नलिखित लेखकों के समावेश का सुझाव सामान्य निर्देशन के रूप में दिया जाता है :—

भारतेन्दु, बालकृष्ण भट्ट, प्रतापनारायण मिश्र, बालमुकुन्द गुप्त, महावीर प्रसाद द्विवेदी, प्रेमचन्द, प्रसाद, श्यामसुन्दर दास, रामचन्द्र शुक्ल, महादेवो, जैनेन्द्र रामकुमार वर्मा, हजारीप्रसाद द्विवेदी, राहुल सांकृत्यायन, बृन्दावनलाल वर्मा, रामवृक्षवेणीपुरी, भगवतीचरण वर्मा, डा० गोरखनाथ (वैज्ञानिक), डा० सत्यप्रकाश (वैज्ञानिक), अज्ञेय, विष्णुप्रभाकर, मोहन राकेश आदि।

पुस्तक के प्रारम्भ में हिन्दी गद्य के विकास और उसकी विभिन्न विधाओं के सामान्य परिचयार्थ उचित भूमिका अवश्य हो और अन्त में प्रत्येक पाठ को (लेखक परिचय के साथ) उपयुक्त और परीक्षोपयोगी अनुशीलनी, जो छात्रों के स्वतंत्र अध्ययन में सहायक और हितकर हो।

पुस्तक इण्डियन स्टैंडर्ड इन्स्टीट्यूट द्वारा अनुमोदित टाइप में २२-३२ (१/१६) के आकार में मुद्रित हो।

साहित्य का इतिहास :—

हिन्दी साहित्य के इतिहास के लिए उसके विविध कालों की प्रमुख प्रवृत्तियाँ, प्रमुख लेखक एवं उनकी प्रमुख रचनाओं का सामान्य परिचय एवं रूपरेखा ही निर्धारित हैं। अध्ययन के लिए आदिकाल से लेकर आधुनिक युग के छठे दशक तक की कालवधि दृष्टि में रखी जाए। ग्रन्थ के प्रारम्भ में हिन्दी भाषा और साहित्य के इतिहास से सम्बन्ध एक परिचयात्मक भूमिका



हो, जिसमें हिन्दी साहित्य के इतिहास के अध्ययन को विशेषताओं के साथसाथ उसके सामाजिक, सांस्कृतिक और राष्ट्रीय महत्व का निरूपण किया जाय।

ग्रन्थ १२० पृष्ठों की (भूमिका के अतिरिक्त) २२-३२ (१/१६) के आकार की हो।

व्याकरण एवं रचना :—

१—शब्द का वर्गीकरण :—

(क) शब्द की परिभाषा

(ख) शब्द भेद—तत्सम, तद्भव देशज, विदेशज।

(ग) प्रयोग, रूपान्तर एवं शब्दार्थ के अनुसार शब्दों का वर्गीकरण : संज्ञा और उसके भेद, संज्ञाओं के प्रयोग, सर्वनाम और उसके भेद, क्रिया और उसके भेद, विशेषण और उसके भेद, क्रिया-विशेषण और उसके भेद, सम्बन्धसूचक और उसके भेद, समुच्चयवाचक और उसके भेद, विस्मयादिबोधक और उसके भेद।

२—शब्दों के रूप :—

उपसर्ग : हिन्दी और संस्कृत—परिभाषा और भेद

प्रत्यय : कृदन्त और तद्धित—परिभाषा और भेद

३—संधि—स्वर, व्यंजन और विसर्ग संधियाँ।

४—समास—परिभाषा, भेद और विग्रह।

५—करक—भेद और प्रयोग।

६—लिंग—भेद और निर्णय।

- ७—वाक्य—वाक्य-रचना, वाक्य-विग्रह और वाक्य-परिवर्तन । सरल ।  
वाक्य, मिश्र वाक्य और संयुक्त वाक्यों का विग्रह और परिवर्तन ।
- ८—वाच्य—कर्तृवाच्य, कर्मवाच्य, विधि वाच्य एवं निषेध वाच्य और परिवर्तन ।
- ९—मुहावरे और कहावतें, पर्यायवाची शब्द, विपरीतार्थक शब्द, समञ्च-रित शब्द । व्याकरण का अध्ययन रचनात्मक पक्षों से संबंधित हो, जिससे छात्रों में व्याकरणिक तत्वों के व्यावहारिक ज्ञान की अभिवृद्धि हो तथा उन्हें शुद्ध, चलित तथा व्याकरणसम्मत भाषा-लेखन का अभ्यास हो सके । इन सबके लिए एक ग्रन्थ उपेक्षित है । ग्रन्थ में उपयुक्त निर्दिष्ट विषयों के अतिरिक्त अध्ययनगत उपयोगिता की दृष्टि से अन्य विषय भी समाविष्ट किए जा सकते हैं । ग्रन्थ में उचित अनुशीलनी और भूमिका का होना आवश्यक है ।

अनुषंगिक अध्ययन :—

इस के लिए एक विशिष्ट पुस्तक निर्धारित होगी, जिसमें लब्धप्रतिष्ठ कहानीकारों की ५-६ कहानियां और नाटककारों के ३-४ एकांकी संकलित होंगे । इस की प्रस्तुति सहायक अध्ययन एवं द्रुत पाठ्य-ग्रन्थ की विशेषताओं को दृष्टिगत रखकर की जानी चाहिये । विद्यार्थियों में शैक्षणिक और साहित्यिक स्तर पर साहित्यिक जागरूकता और संवेदनशीलता उद्बुद्ध करने में यह ग्रन्थ सहायक हो । ग्रन्थ का मुद्रण १२-३२ (१/१६) आकार में १२ पाइका टाइप में किया जाना चाहिए ।

हिन्दी—प्रथम भाषा

निर्धारित ग्रन्थ एवं अध्येतव्य पाठ

नवम और दशम श्रेणी

१९७६ को माध्यमिक परीक्षाओं के लिए निम्नोक्त ग्रन्थ पाठ्य-क्रम में निर्धारित हैं :

प्रथम पत्र :

(i) काव्य-भारती—(राष्ट्रीय शैक्षणिक अनुसंधान और प्रशिक्षण परिषद्, नई दिल्ली, द्वारा प्रकाशित )।

अध्येतव्य पाठ :

—कक्षा नवम्—

१—झाँसो की रानी की समाधि :	सुभद्रा कुमारी चौहान
२—रोटी और स्वाधीनता :	रामधारी सिंह 'दिनकर'
३—बाललीला के पद :	सूरदास
४—कृष्ण-भक्ति और ब्रज-प्रेम :	रसखान
५—मीरा-पदावली :	मीरा
६—आः धरती कितना देती है :	सुमित्रानन्दन पन्त
७—नीति के दोहे :	रहीम

—कक्षा दशम्—

१—ब्रज की सन्ध्या :	हरिऔध
२—हमारा प्यारा भारतवर्ष :	जयशंकर प्रसाद
३—सरस्वती वन्दना :	सूर्यकान्त त्रिपाठी 'निराला'
४—भक्ति के दोहे :	कबीर

५—भक्ति-निवेदन	:	तुलसीदास
६—क्या पूजा क्या अर्चन रे	:	महादेवी
७—मैंने आहुति बनकर देखा	:	अज्ञेय
८—कैकेयी का अनुताप	:	मैथिलीशरण गुप्त
९—घनानन्द-वीथी	:	घनानन्द

(ii) निबन्ध, भाव-विस्तार, सार लेखन, छन्द और अलंकार ।

द्वितीय पत्र :—

(i) गद्य-भारती—(राष्ट्रीय शैक्षणिक अनुसंधान और प्रशिक्षण परिषद  
नई दिल्ली, द्वारा प्रकाशित)

अध्येतव्य पाठ :—

—कक्षा नवम्—

१—मेरी जीवन-गाथा	:	महावीर प्रसाद द्विवेदी
२—बूढ़ी काकी	:	प्रेमचंद
३—स्मृति	:	श्रीराम शर्मा
४—सोना	:	महादेवी वर्मा
५—बहता पानी निर्मला	:	स० ही० वा० 'अज्ञेय'
६—गुरुदेव रवीन्द्रनाथ टेगोर	:	हरिभाऊ उपाध्याय
७—नौव की ईंट	:	रामवृक्ष बेनीपुरी
८—दक्षिण गंगा गोदावरी	:	काका कालेलकर

—कक्षा दशम्—

१—मैं मजदूर हूँ	:	भगवतशरण उपाध्याय
२—भारत की सांस्कृतिक एकता	:	गुलाब राय
३—बल-बहादुरी	:	कन्हैयालाल मिश्र प्रभाकर



४—सीमा-रेखा	:	विष्णु प्रभाकर
५—जीवन और शिक्षण	:	बिनोबा भावे
६—ब्रह्मपुत्र की मोर्चेबंदी	:	धर्मवीर भारती
७—फतहपुर सीकरी	:	रघुवीर सिंह
८—ममता	:	जयशंकर प्रसाद
९—रूपहन्ता घुआँ	:	विद्यानिवास मिश्र

(ii) हिन्दी साहित्य का इतिहास ।

(iii) व्याकरण और रचना ।

अनुषंगिक अध्ययन : Supplementary Readers

Only one of these three books is to be read :—

1. **Samaya Darpan**—by Krishna Chandra. Published by New Bharat Publishing Co., Calcutta..

(For Madhyamik Pariksha, 1976 onwards)

2. **Katha Rupaka** ... Dr. R. S. Pandey. Published by Bharati Pustak Mandir, Calcutta.

[For Madhyamik Pariksha, 1977 onwards]

3. **Katha Ekanki** ... by Dr. K. B. Mishra and Sri Chandra Deb Singh. Published by Kashyap Prokashan, Calcutta..

[For Madhyamik Pariksha. 1977 onwards]

**(4) NEPALI FIRST LANGUAGE****CLASSES VI, VII and VIII**

**The prose lessons of the Text-books and Readers for Classes VI to VIII may be on the following topics :—**

- (1) Patriotism, India's fight for freedom, Indian Culture and Civilisation.
- (2) Geographical, Historical, Economic and Scientific articles.
- (3) Biographical articles.
- (4) Description of travels and voyages.
- (5) Short stories.
- (6) Stories about discoveries and expeditions.
- (7) Classical Stories from Puranas, Jatakas, etc.
- (8) Descriptive and reflective articles.
- (9) Articles on subjects relating to Foreign Countries.
- (10) Selection from Standard Drama.

The articles will be written in chaste idiomatic and standard Nepali and should be properly graded for different classes.

## CLASS VI

## Distribution of marks

## One Paper—100 marks (written 90 ; oral 10)

(1) Text book				
(a) Prose	...	...	...	20
(b) Poetry	...	...	...	20
(2) Grammar	...	...	...	20
(3) Letter-writing and Paragraph-writing			...	15
(4) Supplementary Reader		...	...	15
(5) Oral	...	...	...	10
				<hr/> 100

## Text book :

40 pages should be devoted to prose pieces and 20 pages to poems. It is desirable that there should be 10 prose pieces and 10 pieces of poetry. The page-limit may be exceeded by 8 pages for exercises and pictures. Size of a text book—22" × 32" (1/16) Pica type.

## Grammar

नेपाली व्याकरण—वाङ्मय र रचना

Class VI—वर्ण-विभाग, स्वर र व्यञ्जन, वर्णबाद शब्द ।

शब्द-विभाग, स्वर-सन्धि, संज्ञा, शर्वनाम, विशेषण, क्रिया, अव्यय,

संज्ञाको लिंग—पुल्लिंग, स्त्रीलिंग, नपुंसक-र सामान्य लिंग,

संज्ञाको वचन—एक, अनेक, एकलहि अनेक बनाउने विधि,

विशेषणको भेद, विशेषणमा लिंग भेद,

क्रिया, क्रियाको भेद, सकर्मक, अकर्मक, क्रियाका तीन मुख्य काल—वर्तमान,

भूत, भविष्यत क्रियाका लिंग भेद  
कारक र विभक्ति, कारकका प्रयोग,  
सरल वाक्य र त्यसको रचना ।

There should be a book on Grammar and Composition. The book should be replete with examples, exercises and illustrations. page limit—not more than 100 pages 22" × 32" (1/16), Pica Type.

**There should also be a Supplementary Reader.**

Page-limit—64 pages—22" × 32" (1/16), Pica type.

If necessary, the page-limit may be exceeded by 8 pages for pictures, etc.

Oral lessons should consist of recitation, reading from prose and verse, questions and answers relating to children's environment and experience.

## CLASS VII

### Distribution of marks

One Paper—100 marks (written 90 ; Oral—10)

(1) Text Book—	
(a) Prose	20
(b) Poetry	20
(2) Grammar	20
(3) Essay and Letter-writing or story-writing	20 (12+8)
(4) Supplementary Reader	10
(5) Oral	10
	<hr/> 100



सन्धि—व्याञ्जन सन्धि

संज्ञाको भेद, लिंग परिवर्तन—नियम

कारकको भेद, सर्वनामको भेद, क्रियाको रूप र काल,

वर्तमान, भूत र भविष्यत काल का भेद

क्रियाको भेद,

प्रत्येक अव्यय र अव्यय

विराम—चिह्नहरूको परिचय

चिठी लेखने विधि

मिश्रित वाक्य—मिश्रित-वाक्य रचना,

म, ण, स, श, ष, प्रयोग—कहाँ र किन ?

There should be a book on Grammar replete with exercises and illustrations—Page limit—not more than 100 pages  $22'' \times 32''$  (  $1/16$  ), Small Pica type.

### Text Book

Prose—50 pages, Verse—30 pages. Total 80 pages. The page-limit may be exceeded by 8 pages for exercises and pictures.

Size— $22'' \times 32''$  (  $1/16$  ) Small Pica

Supplementary Reader : ( Prose or Verse )

Size— $22'' \times 32''$  (  $1/16$  ) Small Pica.

Page-limit for Prose—80 pages

Page-limit for Verse—60 pages.

( Either a Prose or a Verse book should be prescribed ).

Oral lessons should consist of recitation, reading from prose and verse pieces, discussion on different topics, questions and answers relating to children's environment and experience.

## CLASS VIII

One Paper—100 marks [ written 90 ; Oral 10 ]

## Distribution of marks

(1) Text book—		
(a) Prose	...	20
(b) Poetry	...	20
(2) Grammar	...	20
(3) Essay and Letter-writing or Story-writing	...	20 (12+8)
(4) Supplementary Reader	...	10
(5) Oral	...	10
		<hr/> 100

**Text Book :**

Prose—65 pages ; Verse—35 pages ; Total—100 pages.  
The page-limit may be exceeded by 8 pages for exercises and pictures.

Size—22" × 32" ( 1/16 ) Small Pica.

**Supplementary Reader** [ Prose or Verse ]

Size—22" × 32" ( 1/16 ) Small Pica.

Page-limit for Prose—100 pages.

Page-limit for Verse—70 pages.

( Either a Prose or a Verse book should be prescribed ).

**Grammar :**

विसर्ग सन्धि,

समास (नेपाली शब्द र उदाहरणहरूमा विशेष जीड दिने)

वाच्य-वाच्य-भेद

शब्द-अव्यय, वाक्य अव्यय

वाक्यको भेद (सरल मिश्रित र संश्लिष्ट)

संश्लिष्ट वाक्य रचना

उखाम (चलतीका तीसबटा जति)

विराम चिह्नको प्रयोग

लघुकरण ( भाव संक्षेप )

क्रिया विशेषण

प्रत्यय र अव्यय-प्रयोगमा

न, ण, स, श, ष प्रयोग—कहाँ र किन ?

There should be a book on Grammar replete with examples, exercises and illustrations.

Page-limit—not more than 100 pages.

Size— $22'' \times 32''$  ( 1/16 ). Small pica.

There may be a book on Composition for Classes VII & VIII.

Page-limit—not more than 200 pages.

Size— $22'' \times 32''$  ( 1/16 ), Small pica type.

## CLASSES IX & X

### A. Distribution of marks for Regular Candidates

Full marks (90 + 90 + 20) = 200

#### 1. First Paper

Verse	...	40
Essay	...	20
Translation from English & Nepali	...	10
Expansion/Substance writing	...	10
Supplementary Readers (Verse)	...	10
		<hr/> 90

**II. Second Paper**

Prose	...	45
Textual Grammar	...	10
Grammar	...	25
Supplementary Readers (Prose)	...	10
		<hr/> 90

**III. Oral**

Supplementary Readers	...	10
Recitation, Loud Reading & Conversation		10
		<hr/> 20

**B. Distribution of marks for External Candidates****Paper I**

Verse	...	50
Essay	...	20
Translation from English to Nepali	...	10
Expansion/Substance writing	...	10
Supplementary Readers (Verse)		10
		<hr/> 100

**Paper II**

Prose	...	50
Textual Grammar	...	15
Grammar	...	25
Supplementary Readers (Prose)		10
		<hr/> 100



**Text Book**

Nepali Patha Samgraha ( New Edition—Book 1, 1972 )  
published by the West Bengal Board of Secondary Education

**Pieces of Study :****CLASS IX****For Madhyamik Pariksha****Secondary Examination 1982 ( onwards )****Prose****Pieces****Author**

- |                |               |
|----------------|---------------|
| 1. Sipahi      | B. P. Kairala |
| 2. Soja        | N. C. Pradhan |
| 3. Gariman     | Indra Sundas  |
| 4. Typist      | B. B. Gurung  |
| 5. Panrey Kaji | M. N. Powrel  |

**Poetry**

- |                                |                      |
|--------------------------------|----------------------|
| 1. Pragati                     | Loknath              |
| 2. Garib                       | Laxmi Prasad Deokota |
| 3. Birsanna, Bisanna Hai       | Dilli Ram Timsinha   |
| 4. Ke Tyesko Kabita Lekhoon    | Balkrishna Sam       |
| 5. Utsarga                     | Lakhi Devi Sundas    |
| 6. Mateko Manchha Ko<br>Bhasan | Bairagi Kainla       |
| 7. Patjhar                     | Nar Bahadur Dalal    |

## CLASS X

## Prose

Pieces	Author
1. Baralko Aago	Guruprasad Mainali
2. Chamu Thapa	Bhimnidhi Tewari
3. Birgati Ko Dhoko	Ramkrishna Sharma
4. Bhanubhakta Ko Chhanda Chunai	Bhai Chand Pradhan
5. Frontier	Shiva Kumar Rai

## Poetry

1. Prasnottarmala	Bhanu Bhakta Acharya
2. Bhanu Astaeey Pachhi	Lekhnath Pouddyal
3. Bhanubhaktaprati	Siddhicharan Srestha
4. Arji	Dharani Dhar Kohrala
5. Timi Ujyalo Parkhi Rahu	Tulsi Bahadur Chhetri
6. Camp Uttho	Hariprasad Gorkha Rai
7. Bihan	Birendra Subba

## Supplementary Readers For Classes IX &amp; X

## Prose

Katha Kusum ( Edited by Sir S. B. Gawali ) published by Nepali Sahitya Sammelan, Darjeeling.

(Except the pieces, Baral Ko Aago and Fukayko Bandhan).

## Verse :

Muna Madan or Naivedya by Laskmi Prosad Devkote  
( published by Sajha Prakasam ).

Or

**Naivadya** by Dharani Dhar Sarma (following pieces only) :—

- (1) Bhanu Prati
- (2) Sahitya Sudha
- (3) Kodanunaya
- (4) Bidyabhyas Ko Proyojanoe
- (5) Udboodhan
- (6) Kahali
- (7) Natya Barband Bhayo
- (8) Hosh Garaun

Grammar and Composition ( for Classes IX and Class X )

### Grammar :

कक्षा सात र आठमा पढिएका विषयहरू सहित निम्न विषयहरू कथा-रचना छन्द-शास्त्र ( मात्रिक र वणिक्र)

लघु र दीर्घ, वर्ण, गणहरू, मालिनी, तोठक, मन्दाक्रान्ता, इन्द्रवज्रा, उपेन्द्रवज्रा, उपजाति वसन्त तिलका, खगधरा, शार्दूलविक्रीडित, अनुष्टुप, शिखरिणी र झ्याउरे छन्द उदाहरण विशेष भानुभक्त्य रामायणमा जाघारित)

अलङ्कार—अनुप्रास, स्लेष, उपमा यन्त्रक व्याजोक्ति व्याजस्तुति अतिशयोक्ति आयन्तुक शब्द (तत्सम र तद्वय)

(i) संस्कृतवाट, (ii) फारसीवाट, (iii) अंग्रेजीवाट, (iv) हिन्दीवाट, (v) नेवारीवाट, (vi) पुर्तगालीवाट, (vii) बंगालीवाट, (viii) तिब्बतीवाट र नेपाली विभिन्न बोलीहरूवाट ।

बाल्य गीत, निनीनानी गीत (नानी फूल्याउने गीत) गाछं खाने कथा, शिशुशब्द, उखान, टुक्का र वाक्का र वाक्यांश, ममता घृणा, समूह र शैशव बूझाउने शब्द ।

### Grammar :

A combined book for Classes IX & X.

Page-limit—between 120 and 150 pages.

Size—22" × 32" (1/16), Small pica type.

### Composition :

A combined book for Classes IX & X.

Page-limit—not exceeding 200 pages.

Size—22" × 32" (1/16) Small pica type.

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## (5) URDU (First Language)

## CLASS VI

## Distribution of marks

1. Text (Prose)	...	...	...	20
2. Text (Poetry)	...	...	...	20
3. Grammar	...	...	...	20
4. Letter-writing	...	...	...	15
5. Supplementary Reader	...	...	...	15
6. Oral	...	...	...	10
				<hr/> 100

Following books are recommended—

- (a) Text-book—Gulzar-i-Urdu, Part IV—Syed Husain Ali
- b) Grammar—Jameul Qawaid - Syed Ahmed.
- (c) Letter-writing—Rahnuma-i-Khat-o-Kitabat (Anwar Book Depot., Calcutta).
- (d) Supplementary Reader - Shabistan-Adab - Wasi Ahmed

## CLASS VII

## Distribution of marks

1. Text (Prose)	...	...	...	20
2. Text (Poetry)	...	...	...	20
3. Grammar	...	...	...	20
4. Essay	...	...	...	20
5. Supplementary Reader	...	...	...	10
6. Oral	...	...	...	10
				<hr/> 100

Following books are recommended :—

- (a) Text-book—Shame Urdu—Part II ( Indian Press, Allahabad).
- (b) Grammar—Jameul Qawaid—Syed Ahmed.
- (c) Essay—Naye Mazamin, Part I—M. Rahman.
- (d) Supplementary Reader—Khulafa-i-Arba—Abdul Hayee—(Jamia Millia, New Delhi).

### CLASS VIII

#### Distribution of marks

1. Text (Prose)	...	...	20
2. Text (Poetry)	...	...	20
3. Grammar	...	...	20
4. Essay	...	...	20
5. Supplementary Reader	...	...	10
6. Oral	...	...	10
			<hr/> 100

Following books are recommended :—

- (a) Text-book—Shame Urdu—Part III (Indian Press, Allahabad).
- (b) Grammar - Jameul Qawaid—Syed Ahmed.
- (c) Essay—(i) Saliqa-i-Tahrir (M/s Bashir Hassan & Sons, Calcutta).  
(ii) Jadid Urdu Composition by Tahir & Kausar.
- (d) Supplementary Reader—Insan ki Kahani—Md Khalil Abbas Siddiqui (Society Book Place, 77, Colootola Street Calcutta-1).

## CLASSES IX &amp; X

## Distribution of marks for Regular Candidates

## PAPER I (90 marks)

Poetry Text	...	40
Essay	...	20
Translation from English to Urdu	...	10
Expansion/ Substance Writing	...	10
Supplementary Readers (Verse)	...	10
		<hr/> 90

## PAPER II ( 90 marks )

Prose Text	...	45
Textual Grammar	...	10
Grammar	...	25
Supplementary Readers (Prose)	...	10
		<hr/> 90

## ORAL TEST ( 20 marks )

Supplementary Readers	...	10
Recitation, Loud Reading & Conversation	...	10
		<hr/> 20

## Distribution of marks for External Candidates

## PAPER I ( 100 marks )

Poetry Text	...	50
Essay	...	20
Translation from English to Urdu	...	10
Amplification / Precis	...	10
Supplementary Reader (Verse)		10
		<hr/> 100

## PAPER II ( 100 Marks )

Prose Text	...	50
Textual Grammar	...	15
Grammar		25
Supplementary Reader (Prose)	...	10
		<hr/> 100

## (a) Text-Book :

Urdu Selections—Published by the West Bengal Board of Secondary Education (New Edition 1976). The following pieces are to be read :

## CLASS IX

Prose	Pages
1. Ruqqat-i-Ghalib	—10
2. Maqalat-i-Sir Syed	11—17
3. Darbar-i-Akbari	26—34
4. Benatun Naash	49—74
5. Biographical Notes	115—133

Poetry	Pages
1. Waqif Bihari	140—146
2. Qamar Siddiqi	Ghazal No. 1,2,3,4,5.
3. Jamil Mazhari	" 2, 4, 6
4. A. A. K. Bekud	" 1,3,5,7,14.
5. Parvez Shahidi	" 2,5,6,8,9
6. Biographical notes	197—206



## CLASS X

## Prose

		Pages
1. Ain-i Ibrat	...	Whole
2. Kashiful Haqaiq	...	"
3. Makatib-i-Wahshat	...	"
4. Duniyan ki Dilchaspiyan	...	"
5. Yadgari-i-Hali	...	"
6. Biographical notes	...	341—352

## Poetry

		Pages
1. Mir Taqi Mir	...	Ghazal No. 1, 2, 3, 4, 5,
2. Ibrahim Zauq	...	" 1, 2, 5, 9, 13.
3. Akbar Allahabadi	...	410—419 (up-to the end of Nasihah-i-Akhlaqi)
4. Fazlul Haque Azad	...	Whole
5. Dr. Iqbal	...	Whole (excepting the three poems noted)*
6. Chakbast	...	whole
7. Biographical notes	...	457—470

\*(1) Insan aur Bazm-i-Qudrat, (2) Ishrat-i-Imroz and  
(3) Jalwa-i-Husn.

(b) **Supplementary Readers :**

Books recommended :—

**Prose**

- (i) Rahmat-i-Alam—Syed Sulaiman Nadvi (Published by Anwar Book Deport., Calcutta).
- (ii) Mirat ul-Urus—Dr. Nazir Ahmed.

**Poetry**

- (i) Musaddas-i-Hali—Maulana Hali (First 100 stanzas for Class IX).
- (ii) Musaddas-i-Hali—Maulana Hali (2nd 100 stanzas for Class X).
- (c) Grammar and Composition for Class IX & X.

Books recommended :—

- (1) Urdu Grammar and Composition—Azaz Afzal
- (2) Urdu Muhavaray—Fakhruddin Siddiqi  
(Syntax, Parsing and Analysis. Also a thorough revision of the whole of Grammar learnt in Classes VI to VIII).

## OTHER FIRST LANGUAGES

(Assamese, Gujarati, Malayalam, Marathi, Modern  
Tibetan, Oriya, Punjabi (Gurumukhi), Santali, Tamil,  
Telugu, Lushai and Sadani).

### CLASSES VI to VII

Distribution of marks—100 (Written 90 ; Oral-10)

#### CLASS VI

			Marks
(1) Text Prose	...	...	20
Poetry	...	...	20
(2) Grammar	...	...	20
(3) Letter-writing and Paragraph writing	...	...	15
(4) Supplementary Reader (Prose or Poetry)	...	...	15
(5) Oral	...	...	10
			100

#### CLASSES VII to VIII

(1) Text : Prose	...	...	...	20
Poetry	...	...	...	20
(2) Grammar	...	...	...	20
(3) Essay-writing Letter-writing or Story-writing	...	...	...	20
(4) Supplementary Reader (Prose or Poetry)				10
(5) Oral	...	...	...	10
				100

In the above First Language, schools may select a graded series of readers for detailed and non-detailed study in the different classes. A suitable book on grammar should also be recommended to students.

The standard should be the same as for other First Languages. It should be remembered that the First Language is generally the mother tongue of the child and the language it uses most.

### DISTRIBUTION OF MARKS IN

Assamese, Marathi, Modern Tibetan, Santali, Lushai and Sadani.

#### CLASSES IX & X

For Regular candidates

Paper I ( 90 Marks )		Marks.
Poetry Text	...	50
Essay-writing	...	20
Translation from English to the respective		
First Language	...	10
Expansion & Substance writing	...	10
		<hr/> 90

#### Paper II ( 90 marks )

Prost Text	...	55
Textual Grammar	...	10
Grammar	...	25
		<hr/> 90



Oral ( 20 marks )		Marks
Text for Non detailed Study	...	10
Recitation, Loud Reading & Conversation	...	10
		<hr/> 20

### For External Candidates

Assamese, Marathi, Modern Tibetan, Santali, Lushai,  
and Sadani

#### Paper I ( 100 marks )

Poetry Text	...	60
Essay writing	...	20
Translation from English to the respective First Language	...	10
Expansion and Substance Writing	...	10
		<hr/> 100

#### Paper II ( 100 marks )

Prose Text	...	60
Textual Grammar	...	15
Grammar	...	25
		<hr/> 100

## (6) ASSAMESE

The following books in Assamese published by Gauhati University, Assam for its Matriculation Examination, 1976 shall be used : (i) Matriculation Assamese Prose Selections published by Gauhati University ( May be had from Messrs Kitapghar, Panbazar, P. O. Gauhati ).

(ii) Matriculation Assamese poetical Selections, Published by Gauhati university. ( May be had from Messrs Sahitya Prakash, Tribune Building, P. O. Gauhati.

## (7) MARATHI

Selections in Marathi ( Higher Level ), Published by Maharashtra S. S. C. Examination Board, Poona and prescribed for the S. S. C. Examination for the years 1964-65. ( To be had from Poona A. V. Griha Publication, 1786, Sadashiv peth Poona 2 )

## (8) MODERN TIBETAN

“Dri-Med-Kun-Idan Gyirnam-Thar” Published by Asiatic Society of Bengal, I park Street, Calcutta-16

## (9) SANTALI

- (1) Hor Kahiniko ( Benagaria Mission Press. Santhal Parganas. ).
- (2) Kathamala [ Aesop's Fables in Santali ] (Benagaria Mission press )
- (3) Pahil Mose puthi ( Genesis ) and Mark [ olak Boge Hokigat ( St. Mark, from Santali version of the Bible ).

(10) LUSHAI

CLASSES IX & X

(a) Prose

- (i) Krista Palai—Chapter XXII-XLI ( page 94-242 )
- (ii) Nundan ( the whole book )
- (iii) Hamasang Mizo Awmdan : Chapters I to 6 (pages 1-22)
- (iv) Kristian vanram kawngzawh : Chapters 1-18 (pages 1-92 )

(b) Poetry

The following pieces from LIRLATPUTTU : HLA THLAN KHAWM are to be read.

- (i) Engkimkan hmuhte hian
- (ii) He khawvel hriat ngai loh Muanna
- (iii) Thil mak chhui sen loh
- (iv) Krista ngaihtuah buk townna
- (v) Chatuan lungpui
- (vi) Huana Isua rum
- (vii) Ka tisa chak awmkhauhzia hi
- (viii) Khawvelah pathianin
- (ix) Tufinriat ang khawngaihna he
- (x) Chawlhni lalpa, kunin ngai la
- (xi) Enna nunnem
- (xii) Malsawm tinreng huar
- (xiii) Ka pa, van in ate hlaan
- (xiv) Chung turni a liam a
- (xv) Vawiin chuan ram tuan
- (xvi) Kumsul vei khua thalin khua

- (xvii) Kan tlang, kan ram a hring a mawi  
 (xviii) Ka wlatuk chhuakin arawn zir  
 (xix) Lawl khawlai vawng Dauorpui  
 (xx) Hmanah pi pu tawna leng tawh hnu

Book of Grammar recommended for classes IX & X :

Frederick J. Sardy—The Elements of Lushai Grammar.

### (11) SADANI

Syllabus in Sadani will be notified later on.

### (12) ORIYA

#### Distribution of Marks for Regular candidates

##### Paper I (90 marks)

Poetry Text	...	40
Essay writing	...	20
Translation from English to Oriya	...	10
Expansion and Substance writing	...	10
From non-detailed study (Verse)	...	10

##### Paper II (90 marks)

Prose Text	...	45
Textual Grammar	...	10
Grammar	...	25
From non-detailed study (prose)	...	10
		<hr/> 90

##### Oral Test (20 marks)

Non-detailed study (Prose 5+Poetry 5)...	10
Recitation, Loud Reading &	
Conversation	10
	<hr/> 20



Distribution of marks for External Candidates

**Paper I (100 marks)**

Poetry Text	...	50
Essay		20
Translation from		
English to Oriya	...	10
Expansion &		
Substance writing	...	10
From Non-detailed		
study (Verse)	...	10
		<hr/> 100

**Paper II (100 marks)**

Prose Text	...	50
Textual Grammar	...	15
Grammar	...	25
From Non detailed		
study ( Prose )	...	10
		<hr/> 100

**II : For Madhyamik Pariksha - 1977**

1. Text-books : 'Sahitya-Prabesh' and 'Kabita Prabesh', published by the Board of Secondary Education Orissa, 1974.

- A. Prose (Detailed study)**      **B. Poetry (Detailed study)**  
**Prescribed pieces :**                      **Prescribed pieces :**

- |                            |                                |
|----------------------------|--------------------------------|
| 1. Vana Vidyalaya          | 1. Kansar Chitan               |
| 2. Kouchhanka Guru Dakhina | 2. Basanta Agaman              |
| 3. Hata Paiti              | 3. Tu Para Bolau Utkal Santana |
| 4. Madhu Babu              | 4. Kalijai                     |

- |                                      |                              |
|--------------------------------------|------------------------------|
| 5. Sir Isaac Newton                  | 5. Suktimala                 |
| 6. Thailand-re Bharatiya<br>Sabhyata | 6. Kisha Goutami             |
| 7. Sariputta                         | 7. Punya Godabari            |
| 8. Oriyara Jatiyata                  | 8. Nadi Prati                |
| 9. Vigyanara Mulya                   | 9. Sri Krishnanka Janma      |
| 10. Manisha Khia Bagha               | 10. Lalu Pain Nanabaya Geeta |
|                                      | 11. Jugavatara               |
|                                      | 12. Shua O Devadutta         |

2. A. Prose (Non-detailed study)

Prescribed pieces :

1. Dhulia Baba
2. Magunira Sagada
3. Upahara Loda Nahin
4. Amara Samarthya O  
Durbalata
5. Bippannar Uddhara
6. Chhinna-Hasta

Or

The selected pieces from Galpasri (latest edition) by Sri Satya Sundar Misra & others already prescribed for Classes IX (1974) and X (1975)

B. Poetry (Non-detailed study)

Prescribed pieces :

1. Dhauli Pahara
2. Dahaniya Khara
3. Gandharira Ashirbada
4. Chhota Mora Gaonti
5. Baramasi Koili
6. Ahe Nilagiri
7. Anusarita, Prabho
8. Bhismanka Shara Shajya
9. Barsha
10. Yuddha Jatra
11. Ravanara
12. Rakta Diya

(ii) **Supplementary Readers**

Galpasri (Latest Edition) by Satya Sundar Misra & others.

The following pieces are to be read—

- |                      |               |
|----------------------|---------------|
| 1. Budha Sankhari    | 2. Manisha    |
| 3. Sua Munhare Patar | 4. Gharbhuda  |
| 5. Ajat Satru        | 6. Akash Deep |

**Grammar**

1. Oriya Vocabulary
2. Varna and Dhvani
3. Parts of Speech

Oriya ( First Language ) for classes IX & X.

For Madhyamik Pariksha, 1985 and onwards. for

Regular as well as for External candidates.

(A) **Prose ( Detailed Study ).**

Text Book : “Sahitya” (1982 Edition) published by Board of Secondary Education, Orissa for classes IX & X.

**Prescribed Pieces :**

1. Seba-Mamatara Pratimurti - Mother Teresa.
2. Utkalara Gramyakala
3. Eka Kathora Pariksha
4. Siksha-o-Tahara Arthamulya
5. Jaugada.
6. Atibadi Jagannatha Das
7. Chatramanankara Karttabya
8. Amagharara Halachala
9. Ajnanubarttita
10. Uchavilasha.

**Prose (Non-Detailed Study )**

Text Book— Galpa-o-Ekankika (1981 Edition) published by Board of Secondary Education, Orissa.

**Selected Pieces :**

1. Budha Sankhari
2. Akasha Deepa
3. Dasya Hreedayare Devata
4. Pita o-Putra
5. Bana Harana
6. Amrutayana

**(B) Poetry ( Detailed Study :**

Textbook—‘Sahitya’ ( 1982 Edition ) published by Board of Secondary Education, Orissa for Classes IX and X.

**Selected Pieces :**

1. Jara Upakhyana
2. Malyabantare Barsakala
3. Kahamukha Anai Banchibi
4. Jagate Kcbala
5. Ashrame Prabhata
6. Santanara Ukti
7. Maha Nadire Jyotsanbihara
8. Muka Bhagabana
9. Khadyotika
10. Mo Jibana Pache
11. Gand harira Asirbada
12. Chilkare Surjysta



**Poetry ( Non-Detailed Study )** Text Book— 'Dharam Pada'  
by Pandit Gopabandhu Das (Published by Gopabandhu  
Sahitya Mandir, Cuttack).

Whole Book to be read.

**Grammar :**

**1. Parts of Speech :**

- (a) Noun, Number, Gender, Case and Case-endings.
- (b) Pronoun,
- (c) Adjective,
- (d) Verb.

**2. Sandhi ; 3. Samasa ; 4. Na-tva Vidhi ; 5. Sha-tva  
Vidhi ; 6. Krudanta-o-Taddhita ; 7. Idiomatic uses ;  
8. Chanda :**

- (a) Daudi, (b) Chokhi, (c) Natabari, (d) Baradi,  
(e) Ashadha Sukla.

**Punjabi (Gurumukhi), Telugu, Gujarati,  
Malayalam and Tamil**

**CLASSES IX & X**

**Distribution of marks for regular candidates**

**Paper I (90 marks)**

Poetry Text	...	40
Essay-writing	...	20
Translation from English to respective		
First Language	...	10
Expansion & Substance writing	...	10
Text for non-detailed study	...	10
		<hr/> 90

**Paper II (90 marks)**

Prose Text	...	55
Textual Grammar	...	10
Grammar	...	25
		<hr/> 90

**Oral Test (20 marks)**

Text for non-detailed study	...	10
Recitation, Loud Reading & Conversation	...	10
		<hr/> 20

Distribution of marks for external candidates

**Punjabi (Gurmukhi), Telugu, Gujarati, Malayalam and Tamil :**

**Paper I (100 marks)**

Poetry Text	...	40
Essay-writing	...	20
Translation from respective First Language	...	10
Expansion & Substance Writing	...	10
Text for non-detailed study	...	20
		<hr/> 100

**Paper II ( 100 )**

Prose Text	...	60
Textual Grammar	...	15
Grammar	...	25
		<hr/> 100

**(13) PUNJABI (Gurumukhi)**

CLASSES IX & X

TEXT BOOKS

**(a) for Detailed Study :**

- (1) CHONVIN PUNJABI VERTIK ATE KAVITA.
- (2) PANJ EKANGI ATE KAHANIYAN.

(Published by the Punjab School Education Board, Chandigarh for its Matriculation Examination, 1974)

**(b) for Non-Detailed Study :**

- (1) JIN SACH PALIE HOE—Prof. Gurdial Singh Phull.  
(Published by the Punjab School Education Board Chandigarh for its Matriculation Examination, 1974).

**(c) Grammar and Composition :**

- (1) PUNJABI VYAKARAN TE LEKH RACHNA.

—Kartar Singh.

(Published by the Punjab School Education Board, Chandigarh for its Matriculation Examination, 1974).

**(14) TAMIL**

For Madhyamik Pariksha 1980 onwards

**1. Text Books (Detailed Study)**

Text Books (Prose & Poetry) Tamil Class X (1977).

Published by Tamil Nadu Text book Committee, Madras.

**2. Text Book (Non-Detailed Study)** India Arivialar I var (five Indian Scientists) 1977, Published by Tamilnad Text Book Committee, Madras.

### 3. Grammar :

Tamil Grammar Books—Classes IX & X(1977)

Published by Tamilnad Text Book Committee, Madras  
Grammar IX Class Book—(pages 112 to 121 to be  
excluded)

Grammar X Class Book—(pages 91 to 101 to be  
excluded)

## (15) TELUGU

**For Madhyamik Pariksha—1981 onwards**

(i) Telugu Text Book (First Language)

for

Detailed Study Parts I and II

S. S. C. Public Examination 1978.

Published by the Government of Andhra Pradesh,  
Hyderabad.

(ii) Panchami Book II

by

Vidwan N. Krishnamurty, M. A., B. Ed.,

for Non-detailed study for S.S. C. Public Examination,  
1978.

Published by the Government of Andhra Pradesh,  
Hyderabad.

The syllabus in Grammar of the above subject will  
remain unchanged.



The following topics of Grammar, Rhetoric and Prosody are prescribed in Telugu :

1. Dhruva pakrutikamulu—Kalan
2. Andhrabhasha Tatsama—Tadbhava Deshya Gramyamulu
3. Telugu Sandhulu
4. Sanskrita Sandhulu
5. Samasamulu
6. Tatsama Parischedamulu
7. Karaka Parischedamulu
8. Taddhita—Krudantamulu—Some important forms
9. Avyayamulu
10. Chhandhassu

The following are to be taught and examples be taken from the prescribed Detailed Text. Utpalamala, Champakamala, Shavdhumala, Mattebham, Tetageeti, Autaveladi, Seesamu, Kandamu.

## II. Alankaramulu :

### (a) Ardhalankaramulu :

Upama, Utpreksha, Atishayokti, Rupakamu, Drustantamu, Arthantaranyasamu, Kramalankaramu, Sleshalankaramu, Vistamalankarumu.

### (b) Shabdalankaramulu :

Vrutyanyuprasa, Chekanuprasa, Latanuprasa, Yamakamu, Muktapada Grastamu.

## For Non-detailed Study :

"Vaghira" ( 1971 Edition ), a Text-book of the Andhra University for their Matriculation Examination, will continue

as Text-book for Non-detailed study in Telugu, ( Short-answer type questions and questions on Composition may be set from this book).

### (16) MALAYALAM

#### 1. Text Books ( Detailed Study )

Kerala Padavali ( Malayalam ), Standard X, Kerala Govt. Education Department, Trivendrum, Kerala. Rs. 2.75

#### 2. Text Book ( Non-Detailed Study )

Bhishma Sapadam, Standard X, Kerala Government. Publication, Trivendrum, Kerala.

#### 3. Grammar.

A suitable book on Grammar and Composition conforming to the standard may be recommended to the students for Classes IX and X of Malayalam ( First Language ).

#### (ii) For External Candidates :

Paper I and Paper II ( 100+100 ) written—200 marks

#### Paper I 100 ( marks )

1. Poetry Text	...	40
2. Essay	...	20
3. Translation from English to Malayalam	...	10
4. Amplification / substance writing	...	10
5. Text for non-detailed study	...	20

---

100

**Paper II ( 100 marks )**

1. Prose	...	60
2. Textual Grammar	...	15
3. Grammar	...	25
		<hr/>
		100

**(17) GUJARATI**

Madhyamik Pariksha—1979 and onwards.

Text-Books : Gujarati Vachanmala (Class X), Published by Gujarati Rajyasala Pathiapustaka Mondal-Ahmedabad.

**Prescribed pieces for Classes IX and X :**  
**for Detailed Study :**

**POETRY**

Pieces	Author
1. Akhil Brahmandman Ektun Shree Hari	... Narsinh Mehta
2. Manava-Ne-Ma-Daish	... Mirabai
3. Guru-shishya Sambandh	... Akho
4. Damayanti-nun-Sativa	... Premananda
5. Prempariksha	... Dayaram
6. Surat	... Narmad
7. Maro Jivan Panth Ujala	... Narshimh Rao Divetiya
8. Atigyan	... Kant
9. Junun Piyar Ghar	... B. K. Thakor
10. Apani yadi	... Kalapi
11. Pitri Tarpan	... Nandalal D. Kavi
12. Vidya	... Zaver Chand Meghani
13. Kon-Fari-Bolave	... Snehrashmi
14. Bano Photograph	... Sundaram

Pieces	Author
15. Adana-Aadaminun Geet	... Prahlad Parekh
16. Junun Ghar khali kartan	... Bulmukund Dave
17. Pralay	... Suresh Joshi
18. Parsvan	... Niranjan Bhaqat
19. Tame Gandhiji ne Joyakatha	... Priyakanta Maniar
20. Tojo, Jara Sambhalajo	... Suresh Dalal
22. Taro Mewad Mira Chhodashe	... Ramesh Parekh

## PROSE

Pieces	Author
1. Kusum-nun-kathan-Tap	... Govardhan Ram Tripathi
2. Chitthi	... Ramanbhai Nilkanth
3. Vyavahar End Parmarth	... Ananda Shankar Dhruva
4. Mata Pita-Ni-Aqua	... Gandhiji
5. Bhavishya-ni Drishtiye	... Kaka Kalelkar
6. Indra Sanano Adhikari	... Kanaiyalal Munshi
7. Mara Purvajo	... Dhansukhlal Mehta
8. Vruddha Sneha	... Ramanlal V. Desai
9. Bhaiya Dada	... Dhumketu
10. Bindu-ni-Dabadi	... Jayanti Dalal
11. Vahu-Beto	... Ishwar Petlikar
12. Samrata Srerik	... Chunilal Madia
13. Apurva Ashwa Medh	... Mrinalini Desai
14. Shruti-ore-Smriti	... Chandra Kanta Bakshi

## (b) Pieces for non-detailed study

1. Vidwano-na-dharma	... Nawalram
2. Dhunva Dhar-ane Bhedaghat Ek Yatra	... R. V. Pathak
3. Ghodi-ane Ghodeswa	Zaverchand Meghani



Pieces	Author
4. Tungabhadra-No-dhani	... Vijay Gupta Maurya
5. Meghani Bhai	... Umashankar Joshi
6. Cricket-na-Savya Sachi	... Bharat Bhatta

## II Grammar and Composition

The following topics are Prescribed :

1. Padach Chheda
2. Upasarga Purvaga
3. Pratiyay
4. Sandhi
5. Samasa (Dwan-dwa, Tatpurush, Bahuvrihi, Avyayibhav)
6. Alankar (Varna Sagai, Yamak, Antyanuprasa, Upama, Rupak, Utapreksha, Atisayokti, Vyatirek, Drastanta Sajvaropan, Aanvya, Virodhabhash)
7. Rudha Prayog
8. Suddha Lekhan
9. Shabada (Virodharthi, Samanarthi one Anekarthi)
10. Nibandha
11. Vichar Vistar
12. Vichar Samkshep
13. Translation (from English Passages to Gujarati).

A Suitable book on Grammar and Composition Conforming to the Standard should also be recommended to students in the above First Language, if not mentioned other wise.

**REVISED SYLLABUS IN GUJARATI (FIRST LANGUAGE)  
FOR CLASSES IX AND X FOR MADHYAMIK  
PARIKSHA, 1985 AND ONWARDS FOR BOTH  
THE REGULAR AND EXTERNAL CANDIDATES.**

**Text Book in Gujarati First Language for Class s IX & X  
to be prescribed for Detailed & Non-detailed studies for  
Madhyamik Pariksha, 1985 and onwards :**

**Text Book in Verse and Prose (Detailed & Non-detailed  
studies) :—**

- (1) Gujarati Vachan Mala Dhoran X ; Edition 1982,
- (2) Text Books for Grammar :—
  - (a) Gujarati Vyakaran for Class IX ; Edition 1982.
  - (b) Gujarati Vyakaran for Class X ; Edition 1982.

The textbooks as aforesaid are published by Gujarat Rajya Shala Pathya Pustak Mandal, Ahmedabad.

“Gujarati Vachanmala Dhoran—10”, 1982 Edition, published by Gujarat Rajya Shala Pathyapustak Mandal, Ahmedabad.”

**Prose : Pieces to be prescribed.**

(a) For Detailed Study	Author
1. Janmabhoomino Tyag	Dhumketu
2. Lohini Sagai	Iswar Pettikar
3. Dushmanoni Khandani	Zaverchand Meghani
4. Be Laghukatha	Mohanlal Patel
5. Bhavobhar	Chunilal Madia
6. Shikhman	Jyotindra Dave
7. Babu Vijli	Aniruddha. Brambhatt
8. Kumarni Shikshan	Indulal Yagnik
9. Pandit Sukhlalji	Raghuvir Choudhary

(b) For Non-detailed Study :

Author

- |                                 |                    |
|---------------------------------|--------------------|
| 1. Intona Saal Rang             | Madhu Rai          |
| 2. Kirtidevno Munjal Sate Melap | Kanaigalal Meenshi |
| 3. Akhano Sansar Tyag           | Chandravadan Mehta |
| 4. Nagadhiraj                   | Kakasaheb Kalelker |
| 5. Jyotindra Dave               | Vinod Bhatt        |

Poetry : Pieces to be prescribed

(a) For Detailed Study :

Poet

- |                                |                    |
|--------------------------------|--------------------|
| 1. Bholi Re Bharwadan          | Narsinha Mehta     |
| 2. Chhappa                     | Akho               |
| 3. Am Ugaryo Chandrahas        | Premanand          |
| 4. Vansaldino Uttar            | Dayaram            |
| 5. Lili Indhoni                | —                  |
| 6. Harina Darshan              | Nanalal            |
| 7. Smruti                      | Labhshanker Thaker |
| 8. Bhai                        | Ravji Patel        |
| 9. Juni Ghar Khali Karatan     | Balmukund Dave     |
| 10. E Loko                     | Priyakant Maniar   |
| 11. Atigyan                    | Kant               |
| 12. Pharbas Virah              | Dalpatram          |
| 13. Hankari Ja                 | Sundaram           |
| 14. Swarag, to, a Swarag Nathi | Umashanker Joshi   |
| 15. Male Na Male               | 'Adil' Mansoori    |

(b) For Non-detailed Study :

- |                       |                     |
|-----------------------|---------------------|
| 1. Na Hum Zazun Magun | Sunderji Betai      |
| 2. Bhale Unalo        | Hari Krishna:Pathak |
| 3. Tamne Khabar Chhe  | Suresh Dalal        |
| 4. Bane               | Manilal Desai       |
| 5. Rasta Vasantna     | Monaj Khanderia     |

(A) Grammar

Gujarati Vyakaran

Dhoran 9

„ 10

1982 edition

### Grammar for Classes IX & X

1. Kriya Visheshan na Prakaro
2. Kriyapadna Rupo
3. Sarvanam
4. Krudanta
5. Sandhi
6. Samas
7. Alankar
8. Viramchinho
9. Padachchheda

### (B) Composition

1. Essay-writing
2. Expansion or substance writing
3. Translation from English to Gujarati

Having considered the written recommendations of Prof. P. P. Revawala Revalodla and other suggestions, it is resolved that the recommendations detailed as above for Syllabus in Gujarati (First Language) for Madhyamik Pariksha to be held in 1985 and onwards are hereby recommended for the approval of the West Bengal Board of Secondary Education.

### Distribution of marks for written papers for the Regular candidates

#### Paper I (90 marks)

Poetry	40 marks
Essay	20 „
Translation from Eng. to Gujarati	10 „
Expansion or Substance	10 „
Text for non-detailed studies	10 „
	<hr/>
	90 marks



**Paper II**

Prose	55 marks
Textual Grammar	10 „
Grammar	25 „
	<hr/>
	90 marks

**Oral (20 marks)**

Text for non-detailed study	10 „
Recitation, Loud Reading Conversation	10 „
	<hr/>
	20 marks

**Distribution of marks for the External candidates.**

**Paper I (100 marks)**

Poetry text	40 marks
Essaywriting	20 „
Translation from English to Gujarati	10 „
Expansion and Substance writing	10 „
Text for non-detailed study	20 „
	<hr/>
	100 marks

**Paper II (100 marks)**

Prose Text	60 „
Textual Grammar	15 „
Grammar	25 „
	<hr/>
	100 marks

## CHAPTER III

### SECOND LANGUAGE

#### OBJECTIVE OF TEACHING A SECOND LANGUAGE

The main objective of the study of Second Language :

- (1) To enable pupils to attain working knowledge of the Language from utilitarian point of view.
- (2) To develop their capacity to express themselves in the language freely, correctly and with proper pronunciation in talks or conversation on ordinary topics.
- (3) To enable pupils to express their ideas of non-technical nature in simple correct language.
- (4) To generate in pupils a love of the language and a desire to cultivate it at leisure for pleasure and profit.

#### (1) ENGLISH (Second Language)

The main object should be to develop the student's language sense and linguistic skill and his ability to understand, speak, read and write general English. With that end in view, English as a Second Language, should be taught as an auxiliary Language to maintain communicative skill with other parts of India and outside. At the end of the Secondary course, a student ordinarily should have the ability

to understand properly English in its simple and non-technical form and express himself freely in simple English. These should be regarded as a broad objective of teaching English at the Secondary stage.

### CLASSES VI, VII & VIII

Distribution of marks ( one Paper—100 marks)

1. Prose Text	...	20
2. Poetry Text	...	10
3. Grammar	...	25
4. Free Translation from First Language to English	...	15
5. Composition. Comprehension Paragraph-writing. Summary	...	20
6. Oral test for judging the pupil's ability in English Conversation	...	10
		<hr/> 100

### CLASS VI

1. Text-book : Learning English—Step one (New edition, published by West Bengal Board of Secondary Education).
2. Grammar & Composition :

Application of basic rules of English Grammar and Grammatical practices as outlined below :

- (i) Parts of Speech (but without sub-classification)—  
nouns, pronouns, adjectives, verbs, adverbs, prepositions, conjunctions, interjections and the articles.

- (ii) Number.
  - (iii) Gender.
  - (iv) Simple tenses Present, past and future.
  - (v) Division of simple sentences into subject, predicate and object.
- II. (i) Sub-classification of nouns.
- (ii) Nominative, Objective, and Possessive Cases of nouns.
  - (iii) Verbs—transitive and intransitive.
  - (iv) Use of capital letters.
  - (v) Use of the stop, quotation mark and interrogation mark.

A book on English Grammar, Composition and Translation combined (Anglo-Bengali, Anglo-Hindi etc.) should be used. Page limit—96. Size—Double Demy (1/16). Type Pica.

## CLASS VII

1. Text-book : Parijat Readers, Book II ( Latest edition, published by West Bengal Board of Secondary Education).
2. Grammar & Composition :
  - I. (i) Pronouns—Person, Number and Cases :
  - (ii) Adjectives and Adverbs - comparison :
  - (iii) Verbs—(a) Simple Conjugation ; (b) Voice ;  
(c) Perfect and Continuous tenses ;  
(d) Auxiliary verbs to be, to have, to do can, may, should, could, ought ;  
(e) Mood—Indicative and Infinitive.



II. (i) Analysis of Simple Sentence subject, predicate, object, adjuncts to subjects and complementary objects.

(ii) Punctuation.

A book on English Grammar, Composition and Translation combined (Anglo-Bengali, Anglo-Hindi etc. should be used. Page limit—128 : Size—Double Lemy (1/16), small pica type.

### CLASS VIII

1. Text-book : Parijat Readers, Book III (Latest edition, published by West Bengal Board of Secondary Education).

2. Grammar and Composition :

I. i) Nouns and Pronouns—direct, indirect and retained objects.

ii) Verbs— a Mood—Indicative, subjunctive, imperative, infinitive :

(b) Defective verbs :

(c) Auxiliary verbs :

(d) Participles.

II. (i) Analysis—(a) Complex and Compound sentences :

(b) Clause Analysis—Nouns, Adjectival and Adverbial clauses :

(ii) Narration—direct and indirect speech of simple kind :

(iii) Transformation of complex and compound sentences —uses of conjunctions.

- A text book on English Grammar, Composition and Translation combined ( Anglo Bengali, Anglo Hindi etc. ) should be used. Page limit—160. Size—Double Demy (1/16), Type—Small Pica.

## CLASSES IX & X

One Paper—100 marks

- |                     |     |    |
|---------------------|-----|----|
| 1. Prose Selection  | ... | 25 |
| 2. Poetry Selection | ... | 15 |

[ There should be 20 pages of reading material in Prose in Class IX and 40 pages in Class X. Students are expected to read 150 lines of verses in each of the two classes. Short questions should be set to test the pupils, general understanding of the meaning of the pieces prescribed. Questions on explanation, critical appreciation or historical background should be avoided. ]

- |            |     |    |
|------------|-----|----|
| 3. Grammar | ... | 15 |
|------------|-----|----|

Use of Prepositions, use of Articles, Punctuation, Transformation of sentences, Change of voice and Mode of narration. Group verbs, Idioms.

- |                |     |    |
|----------------|-----|----|
| 4. Translation | ... | 15 |
|----------------|-----|----|

(Rendering of simple narrative passage from mother tongue into English ).

## 5. Composition ... 30

( Summary, Comprehension, Letter writing, Paragraph writing).

A text-book on English Grammar, Composition (Grammar and Composition in English. Equivalents in recognised regional languages of phrases in Chapters on Idioms and Phrases, Group verbs and Appropriate Prepositions may, however, be allowed in good text books only ) and Translation, Combined for Classes IX and X, should be used. Page limit—240. Size—Double Demy ( 1/16 ). Type—Small Pica.

### MADHYAMIK PARIKSHA—1979 Onwards

Text-book : English Prose and Verse ( Selections)—New Edition, published by the West Bengal Board of Secondary Education.

#### Prescribed pieces

( if not notified otherwise )

#### CLASS IX

#### PROSE

Pieces	Author
1. The Parable of the Good Samaritan	... From the New Testament
2. The Selfish Giant	... Oscar Wilde
3. A Daily Drama	... Jerome K. Jerome

VERSE

- |    |   |     |                      |
|----|---|-----|----------------------|
| 1. | We are Seven                            | ... | William Wordsworth   |
| 2. | Home They Brought Her<br>Warrior Dead   |     | Lord Tennyson        |
| 3. | The Rain                                | ... | William Henry Davies |
| 4. | Stopping By Woods On<br>A Snowy Evening | ... | Robert Frost         |
| 5. | Alone                                   | ... | Walter De La Mare    |
| 6. | The Song of The Palan-<br>quin Bearers  | ... | Sarojini Naidu       |

CLASS X

PROSE

- |    |                                      |     |                       |
|----|--------------------------------------|-----|-----------------------|
| 1. | Jenner, The Conqueror of<br>Smallpox | ... | William & Stella Nida |
| 2. | The End of Fear                      | ... | Jawaharlal Nehru      |
| 3. | Our Heritage—II                      | ... | Mulk Raj Anand        |
| 4. | The Bishop's Candlesticks            | ... | Norman Mckinnel       |

VERSE

- |    |                                   |     |                      |
|----|-----------------------------------|-----|----------------------|
| 1. | The Quality of Mercy              | ... | William Shakespeare  |
| 2. | Joy and Woe are<br>Woven Fine     | ... | William Blake        |
| 3. | Breathes There The Man            | ... | Sir Walter Scott     |
| 4. | Song—To The Men Of<br>England     | ... | Percy Bysshe Shelley |
| 5. | Where The Mind is<br>Without Fear | ... | Rabindranath Tagore  |



## (2) বাংলা

( দ্বিতীয় ভাষা )

( ষষ্ঠ হইতে দশম শ্রেণী )

## উদ্দেশ্য

১। ভিন্নভাষী ছাত্রছাত্রীগণ যেন বাংলা ভাষা শৃঙ্খলরূপে বলিতে পড়িতে ও লিখিতে পারে সেই দিকে লক্ষ্য রাখিয়া এই পাঠ্যসূচী প্রণীত হইয়াছে।

২। এই পাঠ্যসূচীর সাহায্যে ছাত্রছাত্রী মাতৃভাষার সঙ্গে বাংলার সাদৃশ্য সম্বন্ধে সচেতন হইয়া তাঁঠলে জাতীয় সংহতির পক্ষে সহায়ক হইবে।

একটি পত্র : পূর্ণসংখ্যা ১০০

( ষষ্ঠ, সপ্তম ও অষ্টম শ্রেণী )

১। পাঠ্যগ্রন্থ :	(ক) গদ্যাংশ	৩০
	(খ) পদ্যাংশ	২০
২। ব্যাকরণ		১৫
৩। পত্ররচনা, অনুচ্ছেদ লিখন ইত্যাদি		১৫
৪। মৌখিক, শ্রুতলিপি, হস্তলিপিসহ		২০
		মোট ১০০

অনুমোদিত পাঠ্যগ্রন্থ :

১। ষষ্ঠ শ্রেণীর জন্য - কিশলয় ( ১ম ) পঃ বঃ শিক্ষা অধিকার	
২। সপ্তম ,, ,, কিশলয় (২য়)	,, ,, ,,
৩। অষ্টম ,, ,, কিশলয় (৩য়)	,, ,, ,,

ব্যাকরণ - ( ষষ্ঠ, সপ্তম ও অষ্টম শ্রেণী )

পদ পরিচয়, লিঙ্গ, বচন, কারক, বিভক্তি, স্বরসন্ধি ও সহজ ব্যঞ্জন সন্ধি ।

## মাধ্যমিক পরীক্ষা—১৯৭৬ থেকে

একটি পত্র : পূর্ণ সংখ্যা ১০০

( নবম ও দশম শ্রেণী )

১। পাঠ্যগ্রন্থ :	(ক) গদ্যাংশ	২৫
	(খ) পদ্যাংশ	২৫
২। ব্যাকরণ		১৫
৩। ইংরাজি হইতে বাংলায় অনুবাদ		১০
৪। রচনা, গল্প, পত্র, কথোপকথন ইত্যাদি		২৫
		<hr/>
		মোট ১০০

অনুমোদিত পাঠ্যগ্রন্থ :

পাঠমালা ( ২য় ভাগ ) পশ্চিমবঙ্গ মধ্যশিক্ষা পর্ষৎ কর্তৃক প্রকাশিত ।

নির্বাচিত অংশ

নবম শ্রেণী

গদ্যাংশ—

১। রামজয় তর্কভূষণ —ঈশ্বরচন্দ্র বিদ্যাসাগর

অথবা

চরিত্রিক

—মোহনলাল গঙ্গোপাধ্যায়

২। মাস্টার মহাশয়

—প্রভাতকুমার মুখোপাধ্যায়

৩। পেয়ারা গাছের নীচে

—লীলা মজুমদার

পদ্যাংশ—

১। রাবণের প্রতি বিভীষণের

উপদেশ

—কৃত্তিবাস

২। হে মোর দর্ভাঙ্গা দেশ

—রবীন্দ্রনাথ ঠাকুর

৩। পদ্মপজীবন

—মোহিতলাল মজুমদার

দশম শ্রেণী

গব্যংশ—

- |    |                  |                      |
|----|------------------|----------------------|
| ১। | সেকালের বাজার দর | —সুরেন্দ্র নাথ সেন   |
| ২। | স্বদেশরক্ষা      | —দ্বিজেন্দ্রলাল রায় |
| ৩। | কাবুলিওয়ালা     | —রবীন্দ্রনাথ ঠাকুর   |

পদ্যাংশ—

- |    |             |                     |
|----|-------------|---------------------|
| ১। | বংশগৌরব     | —কুমুদরঞ্জন মল্লিক  |
| ২। | প্রভাত উৎসব | —রবীন্দ্রনাথ ঠাকুর  |
| ৩। | বর্ষা       | —সত্যেন্দ্রনাথ দত্ত |

ব্যাকরণ

( নবম ও দশম শ্রেণী )

- |     |                              |                |
|-----|------------------------------|----------------|
| ১।  | বর্ণমালা—বর্ণের শ্রেণী বিভাগ |                |
| ২।  | পদ পরিচয়                    |                |
| ৩।  | সন্ধি—স্বর ও ব্যঞ্জন         | ( পদনরালোচনা ) |
| ৪।  | লিঙ্গ                        | ”              |
| ৫।  | বচন                          | ”              |
| ৬।  | কারক ও বিভক্তি               | ”              |
| ৭।  | সমাস                         | ”              |
| ৮।  | কৃৎ ও তদ্ধিত প্রত্যয়        |                |
| ৯।  | বাক্য                        |                |
| ১০। | সাধু ও চলিত ভাষা             |                |

### (3) NEPALI ( Second Language )

Only those students coming from the schools, recognised by the Delhi Board and the Central Board of Secondary Education and having Nepali as Second Language may also opt for Nepali ( Second Language ) in Class IX from the Academic session 1980.

The External candidates may take up Nepali as Second Language at the Madhyamik Examination 1982 onwards.

**The following Text-books are prescribed in Nepali Second Language for Classes VI, VII and VIII :**

For Class VI—Gurans	Published by the Education
For Class VII—Indrani	Department, Government of
For Class VIII—Sunakhari	West Bengal

The Syllabi in Nepali Grammar (Second Language) for Classes VI, VII and VIII will be as in Bengali Second Language. For Classes IX and X the Syllabus in Nepali Grammar ( Second Language ) will be as in Bengali Second Language excepting Krit, Taddhit, Sandhi and Chalit Bhasha.

### GRAMMAR

#### CLASSES VI, VII & VIII

Pad Parichaya (Parts of Speech)	Bivakti (case ending)
Linga (Gender)	Swara Sandhi
Bachan (Number)	Sahaj Byanjan Sandhi
Karak (Case)	

#### CLASSES IX & X

**Prescribed Text-book—Nepali Sahitya Parichaya—Published by the West Bengal Board of Secondary Education.**



**Pieces of Study :** for Madhyamik Pariksha ( Secondary Examination 1982 onwards).

**CLASS IX**

**Prose**

<b>Pieces</b>	<b>Author</b>
1. Kheer	Sri I. B. Rai
2. Baba Jastai	Smt. Dev Kumar Thapa
3. Imandar Balak	Prof. B. L. Pradhan
4. Mero Purano School	Sri Persu Ram Roka

**Poetry**

1. Pran	Kavi Rabindra Nath Thakur
2. Karma	Bal Krishna Sarma
3. Putali	Siddi Charan Srestha
4. Badal Lok	Dhruba

**CLASS X**

**Prose**

1. Chhele Bela	Rabindra Nath Thakur
2. Bhanu Bhakta Ko Mahatwa	Surya-Bikram Gewali
3. Anukaran Sabda	Shiva Kumar Rai
4. Murtikar Ko Dhoko	Lain Singh Bangdel
5. Abhagi Genius.	Raj Narayan Pradhan

**Poetry**

1. Hanuman Lankini Bhet	Bhanu Bhakta Acharya
2. Satya Sandesh	Lekh Nath Pandeyel
3. Tyo Din Asahaya	Rup Narayan Sinha
4. Sandhya Tara	Narendra Kumai
5. Saishave Smriti	Agam Singh Giri

**Distribution of marks in 'Nepali Second Language  
for CLASSES VI to VIII**

Full marks—100

Prose	...	30
Poetry	...	20
Grammar	...	15
Letter writing & Paragraph writing etc.	...	15
Oral, Dictation & Hand writing etc.	...	20
Total		100

**CLASSES IX and X**

Prose	...	25
Poetry	...	25
Grammar	...	15
Translation from English to Nepali	...	10
Essay, Story, Letter and Conversation etc	...	25
Total		100

## CHAPTER IV

### THIRD LANGUAGE

#### OBJECTIVES OF TEACHING A THIRD LANGUAGE

- (1) To enable pupils to acquire basic preliminary knowledge of the language.
- (2) To awaken interest in pupils to compare and contrast fundamental rules and technicalities of the Third Languages with those of the First or Second.
- (3) To develop pupils' conception of the fact that languages are but sounds produced and guided by definite rules in their articulate and written forms differing in intonation and script formation.
- (4) To develop wider sympathy for and interest in people of different language groups and thus to generate liberality of mind.

### THIRD LANGUAGE

#### Distribution of marks

#### CLASSES VII and VIII

#### One Paper—100 marks

1. Text-book : (a) Prose	...	...	30
(b) Poetry	...	...	20
2. Grammar	...	...	15
3. Simple Translation and Composition	...	...	15
4. Oral, Dictation & Hand-writing	...	...	20
			<hr/> 100

[ Marks in the third languages for classes. VII and VIII are to be distributed in the manner shown above, if not otherwise mentioned in respect of any particular third language, ]

## (১) বাংলা [ তৃতীয় ভাষা ]

( সপ্তম এবং অষ্টম শ্রেণী )

যাহাদের প্রথম অথবা দ্বিতীয় ভাষা বাংলা নহে, তাহাদের বাংলা ভাষার প্রাথমিক জ্ঞান অর্জনে সহায়তা করা এই পাঠ্যসূচীর উদ্দেশ্য ।

একটি পত্র : পৃষ্ঠা সংখ্যা—১০০

( সপ্তম ও অষ্টম শ্রেণী )

১।	পাঠ্যগ্রন্থ	
	(ক) গদ্যাংশ	৩০
	(খ) পদ্যাংশ	২০
২।	ব্যাকরণ	১৫
৩।	অনুচ্ছেদ রচনা	১৫
৪।	মৌখিক, শ্রুতিলিপি, হস্তলিপি	২০
		<hr/>
		মোট ১০০

অনুমোদিত পাঠ্যগ্রন্থ—

সপ্তম শ্রেণীর জন্য কিশলয় (১ম) পশ্চিমবঙ্গ শিক্ষা অধিকার

অষ্টম ” ” ” (২য়) ” ” ”

ব্যাকরণ ( সপ্তম ও অষ্টম শ্রেণী )

পদ পরিচয়, লিঙ্গ, বচন, কারক ।



## (2) SANSKRIT

## Distribution of Marks

## One Paper—100 Marks

## (CLASSES VII &amp; VIII)

(1) Text book					
(a) Prose	...	...	...	30	
(b) Poetry	...	...	...	20	
(2) Grammar	...	...	...	15	
(3) Simple Translation & Composition			...	15	
(4) Oral, Dictation & Hand-writing			...	20	
					100

## CLASS—VII

1. **Alphabet**—Devnagri Script—Svara, Vyanjana—and Yuktavarnas.

II. **Grammar**—Mainly functional through connected pieces though rudiments of formal grammar are also to be included.

(a) **Declension** of the following words :—

Nara, Phala, Lata, Muni, Nadi, Pitr, Go, Matr, Asmad, Yusmad, Tad (in 3 genders).

(b) **Conjugation** of the main roots belonging to the Bhvadi and Tudadi classes in Lat Lrt in Parasmaipadi and past tense with the use of Sma.

(c) Case-endings and adjectives.

- (d) **Indeclinables** like the following and their use in sentences :—

Atra, Kutra, Tatra, Yatra, Sarvatra, Yada, Tada, Kada, Sada, Na, Ca, Va, Tu, Kintu, Pratah, Adya, Adhuna, Diva, Naktam, Sayam, Punah, Mithya, Brtha, Uccaih, Akasmat, Sahasa, idanim, Atha.

### III Written exercises—

Elementary translation of simple sentence into Sanskrit.

### IV Memory work—

10 S'lokas from Canakya to be included in the text.

### V Text book—

A copiously illustrated text book of approximately 40 pages which should contain—

- (i) Alphabet—Vowels, consonants and conjuncts and a list of words.
- (ii) Short Prose passages of about ten connected sentences per lesson which are
  - (a) interesting to children of the age group,
  - (b) descriptive or narrative,
  - (c) Simple and graded, and
  - (d) within the students' intellectual capacity.
- (iii) 10 S'lokas from Canakya.

Reading matter included in the lesson should not exceed 20 pages. Each lesson should be illustrated.

**Text book—Size 22" × 32" (1/16)—14 Point.**

It is essential that the prescribed grammar syllabus should be covered by the lessons and that the approach should be functional. Repetition of forms should be intelligently arranged for the purpose of drilling in grammar, but dull monotony should be scrupulously avoided. After each lesson exercises of different kinds should be given, e.g. comprehension test from the lesson, filling up of blanks, making sentences with given words etc.

**CLASS—VIII**

**1. GRAMMAR**

**(a) Declensions—**

Familiar stems in common use ending in vowels and consonants.

Numerals upto Das'a ( in all genders )

Pronouns—Yad, Idam, Etad, Adas ( in all genders ).

**(b) Indeclinables in sentence structures—**

Nicaih S'anaih, Rte, Nikasa, Vina, Saha, Aho, Drutam, Cirena, Acirena, Atha, Athakim, Adhah, Alam, Avas'yam, Abhitah, Arat, Iti, Iha, Ubhayatah, Eva, Iva, Katham, Kathamapi, Kutah, Prayah, Bahih, S'vah, Hyah, Pas'cat, Puratah, Ekatra, Dhik, Prati.

**(c) Roots—**

Lat, Lot, Lan, Vidhilin and Lrt forms of Bhvadi, Tudadi, Divadi and Curadi classes in Parasmaipadi, of Sru, and Kr in Parasmaipadi.

Mr, Jan, Sev, Labh in Lat and Lrt.

- (d) **Sandhi**—Easy and common forms of Vowel, Consonant and Visarga Sandhi.
- (e) **Karakas and Vibhaktis in outline,**
- (f) **Suffixes**—The use of Ktva, Ktavatu, Ktvāc, Lyap, Tumun.

## II. TRANSLATION AND COMPOSITION of simple and connected sentences in Sanskrit.

## III. ORAL WORK.

**TEXTS**—Text book, copiously illustrated, of about 50 pages.

There should be 30 pages of actual text.

These should—

- (a) be graded.
- (b) use idiomatic, elegant and simple Sanskrit.
- (c) contain lessons from familiar tales, fables as well as narratives preferably from Sanskrit Classics retold in simple Sanskrit.
- (d) have exercises at the end of each lesson on the same pattern as recommended for Class VII, and
- (e) contain 15 Subhāṣita S'lokas in easy and simple metres.

**Text Book**—Size 22" × 32" (1/16)—14 Points.

## Grammar and Composition

A book on Sanskrit Grammar, Translation and Composition of Upakramanikā type written according to the syllabus for classes VII and VIII ( combined ) may be used. Pages not more than 160, Size 22" × 32", Pica type.



### (3) PALI

#### CLASS VII

##### **Text Book :**

Pali-Pariyaya-Patho—Pages 5 to 22.

(Published for the Board of Secondary Education, West Bengal, by Hindi Pracharak Pustakalaya, 195/1, Mahatma Gandhi Road, Calcutta-7).

##### **Grammar :**

Elements of Pali Grammar (Published by West Bengal Board of Secondary Education).

[Chapters I, IV, V and VI (Declension of Deva, T Muni, Bhikku, Lata, Nadi and Phala only)].

##### **Written Exercises :**

Elementary Translation of simple sentences into Pali.

#### CLASS VIII

##### **Text Book :**

Pali-Pariyaya-Patho—Pages 25 to 53

(Published for the Board of Secondary Education, West Bengal, by Hindi Pracharak Pustakalaya, 195/1, Mahatma Gandhi Road, Calcutta-7).

##### **Grammar :**

Elements of Pali Grammar (Published by West Bengal Board of Secondary Education).

Chapter VI : Declension of Go, Raja, Pitu, Kathu, Matu and Dhitu only.

Chapter VII : Comparison of Adjectives.

Chapter VIII : Conjugation of roots Bhu, Da, Gam, Vad. and Kar in Present, Past and Future tenses only.

### **Written Exercises :**

Translation of simple sentences into Pali,

## **(4) PERSIAN**

### **OBJECTIVES**

The objective of the Study. of Persian as a Third Language should be :

1. To enable pupils to acquire basic preliminary knowledge of the language.
2. To develop pupils' conception of the facts that languages are but sounds produced and guided by definite rules in their articulate and written forms differing in intonation and script formation.
3. To impress upon the pupils' mind that different languages belong to the same family of ideas and thoughts though they differ in form and scripts. This will be a good deal to harmonize their outlook and liberalize their mind.

## **SYLLABUS**

### **CLASS VII**

**TEXT BOOK :** A copiously illustrated text-book of about 40 pages which should contain :

1. Alphabet – Persian Scripts, Vowels, Consonants and Conjuncts with different variations in writing,

II. Short Persian passages of about ten simple connected sentences per lesson which are :

- (a) interesting to children of the age-group,
- (b) descriptive or narrative,
- (c) simple and graded,
- (d) within the students' intellectual capacity.

III. Drilling in Izafat ( Possessive ); demonstrative and personal pronouns ; adjectives ; nouns of pupils' environments ;

IV. Persian "Masdar" ( Infinitive ) not more than 15 with their simple Past Tense ; A few forms in Present Tense.

V. As it is a foreign language and the beginners cannot use dictionary, each lesson should have hints in vernaculars to enable the pupils to grasp the meaning easily.

VI. At the close of each narrative lesson there should be written exercises and short questions.

N.B.—Reading matter included in the lesson should not exceed 20 pages.

**Text-Book size :** 22" × 32" ( 1/16 ) Type, preferably 14 point  
( Kanta Press ) "Script printing"

**Text-Book ( Prescribed )**

(1) FARSI-e-KUDAKAN—BOOK I

by prof: Masihullah, M.A.

( Anwar Book Depot.

99/1A, Lower Chitpur Road, Calcutta-1 ).

## GRAMMAR

- (a) Definitions of Nouns, Pronouns, Adjective, Verbs with examples. Simple conjugation of Masdars (Infinitive) used in the Text.
- (b) Composition—exercise on Nouns, Pronouns, Adjectives, and Verbs as under (a).
- (c) Translation—Simple translation from First Language or English into Persian.

**One Paper—100 marks****Distribution of Marks**

- |   |      |
|---|------|
| 1. (a) Simple short questions from the Text                                       | : 30 |
| (b) Translation of any Persian piece or extract from the Text into First language | : 30 |
| (c) Memory test   | : 10 |
| 2. (a) Grammar from within the Text book  | : 10 |
| (b) Translation from First Language or English into Persian ...                   | : 10 |
| (c) Composition—Construction of simple short sentences with given words           | : 10 |

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Total 100

**Notes :**

1. It is essential that the prescribed Grammar syllabus should be covered by the lesson and that the approach should be functional. Repetition of forms should be intelligently arranged for the purpose of drilling in Grammar, but dull monotony should be scrupulously avoided. After each lesson,



exercises of different kinds should be given, e.g. comprehension test from the lessons, filling up of blanks, making sentences with given words etc.

A book on Persian Grammar, Translation and Composition written according to the syllabus for Classes VII and VIII (combined) may be used. Pages not more than 160 ; Size :—22" × 32" Pica Type.

### BOOKS PRESCRIBED

#### Grammar and Composition

Child's Persian Grammar and Composition (for Classes VII and VIII) by A. Reza, M.A.

### TRANSLATION

Child's Persian Translation (for Classes VII and VIII) by—A. Reza, M.A.

(Taj Book Depot,  
120/1, Lower Chitpur Road, Calcutta-1.)

### CLASS VIII

**Text Book :** Copiously illustrated of about 50 pages of reading materials which should contain :

- (i) Lessons (graded).
- (ii) Idiomatic, elegant and simple Persian (Classical) and Modern both).
- (iii) Lessons from familiar tales, instructive passages, topics related to lives, personality and patriotism.

- (iv) Descriptive or narrative, short prose passages of about ten connected sentences per lesson.
- (v) At least six lessons in easy and simple verse, suited to the pupils' intellectual capacity.

**Notes :**

(1) Reading matter included in the lesson should not exceed 30 pages. Each lesson should have meanings or hints of words or phrases given.

(2) Written exercises or short questions at the close of each lesson of the same pattern as recommended for Class VII. Text Book Size—22" × 32" (1/16)—14 points (Script Printing) Kanta Press.

**Text-Book (Prescribed) :**

FARSI-e-KOODAKAN—BOOK II

by—Prof. Masihullah, M.A.

(Anwar Book Depot.,

99/1-A, Lower Chitpur Road,

Calcutta-1).

**GRAMMAR**

(a) Definitions of Adverb, Number and its kinds, Gender, Case, Preposition from within the text with examples of a few Masdar conjugations.

**COMPOSITION**

(b) Exercises on Adverb, Number, Gender, Case and Preposition as under (a).

**TRANSLATION**

(c) Simple and connected sentences from First Language or English into Persian.

## One Paper—100 marks

**Distribution of Marks**

1. (a) Short and simple questions from the Text	30
(b) Translation of any Persian piece or extract from the Text into First Language	30
(c) Memory test	10
	<hr/> 70
2. (a) Grammar—number, case, preposition and conjugation ... ..	10
(b) Translation—from First Language or English into Persian ... ..	10
(c) Composition—Construction of simple sentences with given words, filling up of blanks or changing the number ...	10
	<hr/> Total 100

**Books Recommended For Grammar, Composition and Translation :—**

1. Child's Persian Grammar and Composition for Classes VII&VIII by A. Reza, M.A.
2. Child's Persian Translation for Classes VII&VIII by A. Reza, M.A.  
(Taj Book Depot,  
120/1, Lower Chitpur Road, Calcutta-1).

**Note :** A book on Persian Grammar, Translation and Composition written according to the syllabus for Classes VII & VIII (combined) may be used. Pages not more than 160 ; Size—22" × 32" Pica Type.

**(5) ARABIC (Third Language)****CLASS VII****One Paper—100 marks****Distribution of Marks**

1. (a) Short and simple questions from the Text	...	...	30
(b) Translation of Arabic pieces or extracts from the Text into First Language	...	...	30
(c) Memory test	...	...	10
			<hr/> 70
2. (a) Grammar	...	...	10
(b) Translation from First Language or English into Arabic	...	...	10
(c) Composition—Construction of short and simple sentences with given words	...	...	10
			<hr/> Total 100

The whole Syllabus of Arabic in Class VII shall be covered by the Text-book and a book on Grammar, Translation & Composition.

**SYLLABUS**

1. An illustrated Text-book shall contain the following :
  - (i) Alphabet—al-Huruful Hijaiyah and al-Huruful Illal.
  - (ii) Al-Harakat and ab-Dawabit etc.
  - (iii) Different forms of letters.
  - (iv) Exercise for spelling and reading.



- (v) Easy words and simple sentences.
- (vi) Discourses.
- (vii) Narrative short stories and parables.
- (viii) Memory work—Suwar and Ad'iyah (Chapters of the Qur'an and important prayers).

**Notes :**

- (a) Important Vocabulary shall be given at the top of every discourse and story.
- (b) Words and particularly verbs shall be marked with vowel-points.
- (c) Pica bold Arabic Type shall be used.
- (d) Pages of the Text shall be approximately 50 (fifty).

II. A book shall contain the following :

1. **Grammar**—Topics of Grammar :

**Orthography** : Definition of Ism, Fi'l, Harf ; Tasriful Af'al ; Aqusamul Af'al (Thulathi and Ruba'i) ; Abwabul Af'al (Thulathi Mujarrad and Maziduth-Thulathi) ; Aqsamul Ism (Jemid, Mushiaq—Ijmali, Thulathi, Ruba'i ; Khumasi ; Ma'rifah and Nakerah).

2. **Translation**—Basic rules of translation and simple sentences to be translated into Arabic from First Language.

3. **Composition**—Filling up the blanks, picking up the given words and correction of the given sentences and words etc. The exercises shall primarily be based on the grammatical rules already explained in the grammatical part of the Text.

**Notes :**

- (a) Pica Arabic bold type should be used.
- (b) Arabic words shall be marked with vowel points.
- (c) Pages of the Text shall be approximately 80 (eight).

**CLASS VIII****Distribution of Marks****One Paper—100 marks**

1. (a)	Short and simple question from the text	30 marks
(b)	Translation of Arabic pieces or extract from the Text into First Language	30 marks
(c)	Memory test	10 marks
		70 marks
2. (a)	Grammar	10 marks
(b)	Translation—From First Language or English into Arabic	10 marks
(c)	Composition—Construction of simple sentences with given words, filling up of blanks or changing the number	10 marks
	<b>Total</b>	<b>100 marks</b>

The whole Syllabus of Arabic in Class VIII shall be covered by a Text book and a book on Grammar, Translation and Composition.

1. An illustrated Text-book shall contain the following :—
  - (i) Easy short Surahs and some Prophetic traditions.
  - (ii) Discourses.
  - (iii) Descriptive and narrative stories.
  - (iv) Poems—50 complete (for study).

## Notes

- (a) Surahs, Traditions and Poems shall also be memorized.
- (b) Important vocabulary shall be given at the top of every lesson.
- (c) Words and particularly verbs shall be marked with vowel points.
- (d) Pica bold Arabic Type shall be used.
- (e) Pages of the Text shall be approximately 60 (sixty).

II. Another book shall contain the following :

(1) **Grammar**—Topics of Grammar :

Ismul Jins ; Ismul Alam ; Ismul Mawsul ; Ismul Isharah ; Al-Damir ; Al-Munsarif wal-Ghayrul-Munsarif ; al-Mudhakkar wal Muwannath ; al Mansub ; at-Tasghir ; al-Masdarul Mimi ; al-Mushtaqat ( in detail ) ; Ismul-Fa'il ; Ismul Maf'ul ; Ismuz Zarf ; Ismul Tafdil ; and Awzanu-Asm'a-il Mubalighah.

- (2) **Translation**—Basic rules of translation and short sentences and simple passages to be translated from First Language into Arabic and vice versa.
- (3) **Composition**—Filling up the blanks, picking up the given words and correction of the given sentences and words etc. The exercises shall primarily be based on the Grammatical rules already explained in the grammatical part of the Text.

## Notes :

- (a) Pica Arabic bold Type should be used.
- (b) Arabic words shall be marked with vowel points.
- (c) Pages of the Text shall be approximately 80 (eighty).



(1) Text-book written according to the above mentioned Syllabus and standard shall be approved and prescribed for the students of Classes VII & VIII from 1975 onwards. In case of non-approval and non-availability of Text books written according to the Syllabus, the following books are recommended for the students.

### **Recommended books :**

#### **For Class VII**

- (1) Al-Mukhtar (Part 1), by Prof. Md. Shahidullah, M.A.
- (2) Nukhbatul Adab (Part I), by Prof. Md. Sanaullah, M.A.
- (3) Madarijul 'Arabiyah (Part I) by Maulana Md. Musawwar Ali

#### **For Class VIII**

- (1) Al-Mukhtar (Part II). by Prof. Md. Shahidullah, M.A.
- (2) Nukhbatul-Adab (Part II), by prof. Md. Sanaullah, M.A.
- (3) Topics of Grammar as enumerated above may be taught to the students of Classes VII & VIII from any standard book on Arabic Grammar based on "Mubadiyul 'Arabiyah" by Rashid ash-Shartuni.

### **(6) LATIN, (7) GREEK & (8) CLASSICAL TIBETAN**

#### **FOR CLASSES VII & VIII**

Schools should give their pupils training in :

- (a) Translation of simple sentences from the First Language, and



- (b) Construction of short sentences illustrating the concordance of Subject and Predicate as well as of Adjective and Noun.

No Text-books are recommended for Latin, Greek and Classical Tibetan ; but a suitable graded reader of about 40 pages for Class VII and about 50 pages for Class VIII may be used. There should also be a suitable book on Grammar containing the major rules.

### (9) CLASSICAL ARMENIAN

The syllabus in Classical Armenian will be Notified later on.

### (10) FRENCH

#### CLASS VII

#### A. (a) Oral test :

Dictation	...	...	5	} 20 marks
Conversation	...	...	5	
Reading	...	...	5	
Recitation	...	...	5	

- (b) Question to be set and answered  
in French —Prose Text ... 40

- (c) Composition based on an outline 10

- (d) Grammar (applied) ... 30
- 
- 100

**B. Text-Books :** Dondo—"Modern French Course"  
(Harrup—Oxford University Press)

Prose Texts : Selected from lessons 1 to 15

Conversation I	...	...	Page 38
Lecture I	...	...	Page 40
Conversation II	...	...	Page 66
Lecture II	...	...	Page 68
Lecture in Lesson XII	...	...	Page 73
Lecture in Lesson XIII	...	...	Page 77
Lecture in Lesson XIV	...	...	Page 83
Conversation III	...	...	Page 93
Lecture III	...	...	Page 94

**C. Grammar :** Grammar to be taught from the above mentioned lessons (1 to 15).

**CLASS VIII**

**A. Distribution of marks (One Paper—100 marks).**

(a) Oral Test :

Dictation	....	...	5	} 20 marks
Conversation	...	...	5	
Reading	...	...	5	
Recitation	...	...	5	

(b) Question to be set and answered

in French : Prose Text	...	25
Poetry Text	...	15

(c) Composition based on an outline 20

(d) Grammar (applied) ... 20

**B. Text-Book :** Dondo—"Modern French Course"  
(Harrup—Oxford University Press)

**Prose Text :** Selected from lessons 16 to 31 (omit translation passages )

(1) All 'lectures' set at the beginning of each lesson.

(2) In the revision exercises Conversation and lectures IV, V & VI.

**C. Grammar** to be taught from lessons 16 to 31.

**Poetry Text :** "A Book of French Verse"—edited by  
A Maria Gabriel, "Mary's Home"  
7/1, Sourashtranagar II Street,  
Choolai Medu, Madras—24.

The following poems are prescribed :—

1. La Fontaine—La Grenouie qui veut se  
faire aussi grosse que le boeuf ( from  
line 1 to 11) Page 39
2. V. Hugo—Elle avait pris se pli (from  
line 1 to 7) Page 124
3. V. Hugo—Lorsque l'enfant parait ( from  
line 1 to 6 ) Page 125
4. Th. Gautier—La Source ( from line 1 to 8) Page 162
5. Th. Gautier—Noel ( from line 1 to 8 ) Page 168

**(11) GERMAN****(A) Distribution of marks****(one paper—Total marks—100)****For Class VII**

(i) Oral Test :			
Dictation	...	...	5
Conversation	...	...	5
Reading	...	...	5
Recitation	...	...	5
			} 20marks
(ii) Questions on Text	...	...	40 marks
(iii) Grammar (applied)	...	...	40 marks
			<hr/> 100 marks

**For Class VIII**

(i) Oral Test :			
(Same as in Class VII)	...	...	20 marks
(ii) Questions on Text	...	...	40 marks
(iii) Composition based on an outline	...	...	10 marks
(iv) Grammar (applied)	...	...	30 marks
			<hr/> 100 marks

**(B) Text Book****For Classes VII & VIII**

**DEUTSCHE SPRACHELEHRE FÜR AUSLANDER-  
SCHULZ/GRIESBACH in einem Band**  
(10th Edition, 1976)

available from—Kant Dabholkar

827/19, D. M. Road  
Poone—411001  
Tel : 27998



## (12) HINDI

## CLASSES VII &amp; VIII

**A. Distribution of Marks (One Paper—100 marks)**

Prose	...	...	...	30 marks
Poetry	....	...	...	20 marks
Grammar	...	...	...	15 marks
Translation and Composition			...	15 marks
Oral, Dictation and Composition				20 marks
				<hr/> 100 marks

**SYLLABUS****B.****CLASS VII**

The language should be taught in such a way that students should acquire ability to recognise Hindi Vowels and Consonants, to understand simple conversations, simple descriptions, to pronounce distinctly Hindi Vowels, to say small sentences, to write correctly Devnagri script, to know Hindi Nouns, Pronouns, Adjectives, Genders etc.

The Text-book should be an illustrative Primer containing Prose and Poetry pieces of about 64 pages with bold, distinct and standard type. In the first half of the book vowels, 'matras,' consonants, simple words, conjoint letters, double consonants etc. are to be introduced. The second half of the book should consist of lessons based on everyday-life, objects of nature and environments of the children. Suitable poetry pieces should not exceed more than  $\frac{1}{4}$  th of the contents.

**Grammar :**

(1) Portions of Grammar to be taught should be carefully integrated into the lessons of the Primer with due attention to gradation. Not the Rules of Grammar but the correct grammatical usage should be practised by means of suitable examples.

- |            |   |
|------------|---|
| Nouns      | — Proper and Common Nouns, Genders.   |
| Pronouns   | — Personal Pronoun.   |
| Adjectives | — Adjectives of quality.  |
| Verbs      | — Present, Past and Future tenses, imperative mood. Stress should be laid on the following :— |

Formation of sentences using verbs of the root 'to be' in Present tense, imperative mood, Past tense and Future tense.

Grammar should be taught by inductive method.

**C.****CLASS VIII**

In addition to language skills, criteria and other features of Class VII, special points should be stressed in Class VIII e. g. ability to make out pronunciation differences in Hindi Vowels and Consonants, to recognise the differences in meaning and intention, to understand short fable and anecdotes, to follow simple short dramatic conversation, to understand arguments etc. Ability to speak small sentences with proper accent, to give simple directions, to relate one's experiences, to narrate simple fables, to read simple fables, fairy tales, to write correctly Hindi punctuation and small topics of daily use, to reproduce and write 10 to 15 lines of poetry, to write simple letters etc, is also necessary. From functional grammar ability

to recognise main Hindi Parts of Speech, Case-endings, Transitive and Intransitive Verbs etc. should be stressed.

**Text-book :** One text-book with Prose and Poetry pieces should have about 80 pages (exclusive of illustrations) printed in crown in clear type—14 points. The text book should contain lessons on celebrations, excursions, dialogues folk tales, fables, fairy tales, description of sports, tales of adventures and travels etc. in prose as well as simple narrative poems, Short life stories of great men of national fame may also be included. Poetry lessons should not be more than  $\frac{1}{4}$ th or  $\frac{1}{5}$ th of the contents. There should also be some exercises, oral and written.

## Grammar

Revision of lessons learnt in Class VII, The following new matters are to be included :—

1. Nouns — Abstract nouns, genders, numbers, cases (continued), changes in gender,
2. Pronouns — Indefinite, Demonstrative and Relative, declension of pronouns.
3. Adjectives — Adjectives of quality and quantity.
4. Verbs — Auxiliary Verbs.
5. Sandhi
6. Indefinite and subjunctive mood.

The portion of Grammar to be taught should be carefully integrated into the lessons of the Text-Books with due attention to gradation. Special attention should also be given to the comparison, especially of the similarities and differences in the construction of sentences, the idioms and the words, of the

Bengali language and Hindi as arising out of the lessons to be taught. Care should be taken to avoid all grammatical subtleties and irregularities but Basic Grammar to be taught should be carefully fixed into the mind of the student.

### CLASSES VII & VIII

(13) Russian

(14) Portuguese

(15) Spanish

(16) Italian

The syllabuses in the above language will be notified later on.

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## SYLLABUS IN MATHEMATICS

### The Objectives of the Study of Mathematics at Secondary School Level

- (1) To develop powers of reasoning.
- (2) To enable to solve speedily the numerical and geometrical problems that arise in their school, family and community activities.
- (3) To encourage pupils to cultivate the qualities of exactness in expression and performance.

The aim of teaching Arithmetic and Algebra at secondary school level :

- (i) To make the pupils familiar with number system and basic operations on them and laws related to these operations.
- (ii) To acquire knowledge of manipulation with the elements of number system so as to make use of them in problems of daily life.

### Revised Syllabus For Class VI

(Introduced from 1981)

#### Arithmetic

Marks.

1. Revision of previous work through examples.  
For measures and weights only Metric system to be used. Indian Decimal Coinage to be used with stress on those units which are of common use.
2. H. C. F. and L. C. M.
3. Basic operations on fractions and terminating decimals, applications to simple problems.

70

4. Conversion of fractions into decimals (terminating and recurring).
5. Extraction of square-root by factorisation. Application to simple problems.
6. Applications of Unitary method to simple problems relating to Profit and Loss, Time and Work. (Problems should be properly graded).

## Geometry

30

The aim of teaching Geometry at this stage is to make the pupils gradually familiar with geometrical figures and their properties informally through activities and experiences.

1. (i) Acquaintance with solid and plane figures through models and common objects.
- (ii) To illustrate the three undefined terms, viz, Point, Straight line and Plane, through common objects and to verify the following relations between them :
  - (a) Through one point it is possible to draw as many lines as one likes.
  - (b) Through two points one and only one straight line can be drawn.
  - (c) Three or more points on a plane may colline or not.
  - (d) Two straight lines on a plane may or may not intersect Acquaintance with parallel lines.

- (e) Three or more straight lines on a plane may or may not be concurrent
  - (iii) Acquaintance with a line segment and an angle. Measure of an angle. A straight angle and a right angle ; their measures in degrees. An acute angle and an obtuse angle. Acquaintance with perpendicularity.
  - (iv) Acquaintance with different geometrical plane figures. viz, Triangles, Quadrilaterals and Circles.
  - (v) Construction of paper models of Rectangular Parallelopiped, Cube, Tetrahedron. Counting the number of their vertices, faces and edges.
2. Use of geometrical instruments for the following :
- (i) To measure an angle by a Protractor.
  - (ii) To draw a circle and an arc of a circle with a given centre and a given radius.
  - (iii) To bisect a line segment
  - (iv) To draw a perpendicular on a given straight line :
    - (a) from a point outside it,
    - (b) at a given point on it.
  - (v) To bisect a given angle.

**Text-Book**—Mathematics books (Bengali, English, Hindi and Nepali Editions) written by West Bengal Board of Secondary Education and published by Government of West Bengal are the only approved text books :



**Revised Syllabus for CLASS VII**

(Introduced from 1982)

	Marks
<b>Arithmetic</b>	<b>35</b>
1. Revision of previous work only through exercises on topics introduced in earlier Classes.	
2. Conversion of decimals (terminating and recurring) into fractions. Approximate value of fractions correct upto three places of decimals.	
3. H. C. F. and L. C. M. of fractions and decimals. Applications to simple problems.	
4. Square root by division. Applications to simple problems.	
5. Application of Unitary method to simple problems relating to Time and Distance, Simple Interest. (Problems should be direct and properly graded)	
6. Problems of square measures.	

**Algebra****35**

1. The use of symbols to generalise simple arithmetical problems without formally introducing equations.
2. Integral numbers : positive and negative. Basic operations : addition, subtraction, multiplication, and division.
3. Laws : Commutative, Distributive and Associative.
4. Polynomials (with integral and fractional Coefficients). Their additions and subtractions. Multiplication of two Polynomials, each with two terms. Division of Polynomials with a single term divisor.



5. The following formulae and their easy applications :

$$(a+b)^2 = a^2 + 2ab + b^2$$

$$(a-b)^2 = a^2 - 2ab + b^2$$

$$(a+b)(a-b) = a^2 - b^2$$

Geometrical representation of the above formulae.

6. Simple factorisation using the above formulae and laws stated in Sec. 3.
7. Formation of linear equations with one variable to represent simple problems and their solutions. (Cases where the variable appears in the denominator are excluded).

## Geometry

30

The aim of teaching Geometry at this stage is the same as in Class VI.

1. To demonstrate that translation and rotation of solid bodies and also of geometrical plane figures are possible without any change of their size and shape. In case of geometrical Plane figures, reflection and/or paper folding may be used.
2. Activities verifying the following statements :
  - (i) When a straight line cuts two other straight lines, those other two straight lines are parallel if a pair of corresponding angles are equal.
  - (ii) Two intersecting straight lines cannot both be parallel to a third straight line.
  - (iii) Congruence of two triangles : SAS, ASA  
use of the symbol ( $\cong$ ) to indicate congruence.

- (iv) In congruent circles (or in the same circle) equal chords cut off equal arcs and subtend equal angles at the centre, and conversely.

### 3. Constructions :

- (i) • Angle equal to a given angle,
- (ii) Triangles with given parts :
  - (a) three sides,
  - (b) two sides and the included angle,
  - (c) one side and the two angles adjacent to it.
- (iii) Quadrilaterals with given parts.

**Text Book :** Mathematics Books (Bengali, English, Hindi and Nepali Editions) written and published by West Bengal Board of Secondary Education are the only approved text books.

### Revised Syllabus for Class VIII

(Introduced from 1983)

	Marks
<b>Arithmetic</b>	<b>30</b>
1. Revision of previous work only through exercises on topics introduced in earlier classes.	
2. Average. Applications to simple problems based on experience of daily life of the pupil.	

3. Extraction of Square root of fractions and decimals.  
Application to simple problems.
4. Applications of Unitary Method to problems relating to Time and Distance, and Time and Work.  
(Problems should be direct and properly graded).

## Algebra

40

1. Revision of previous works through examples.
2. Multiplication of Polynomials, each with more than two terms. Division of Polynomials with a divisor having more than one term.
3. The following formulae and their applications :

$$(a+b)^3 = a^3 + 3a^2b + 3ab^2 + b^3 = a^3 + b^3 + 3ab(a+b)$$

$$(a-b)^3 = a^3 - 3a^2b + 3ab^2 - b^3 = a^3 - b^3 - 3ab(a-b)$$

$$(a+b)(a^2 - ab + b^2) = a^3 + b^3$$

$$(a-b)(a^2 + ab + b^2) = a^3 - b^3$$

Physical representation of first two of the above formulae using blocks.

4. Factorisation using the above formulae.
5. Factorisation of a quadratic expression by breaking the middle term.
6. H. C. F. and L. C. M. of simple expressions by factorisation, and by division.
7. Fractions, and the four basic operations on them.
8. Solution of general linear equations involving one variable.

**Geometry****30**

The aim of teaching Geometry at this stage is to make the pupils familiar with logical deductive reasoning. Any form of logical reasoning is allowed. The following properties obtained through activities in previous classes should be taken as axioms.

- (i) When a straight line cuts two other straight lines those other two straight lines are parallel if a pair of corresponding angles are equal.
- (ii) Two intersecting straight lines cannot both be parallel to a third straight line.
- (iii) If the two sides and their included angle in a triangle are respectively equal to the two sides and their included angle in another triangle, the two triangles are congruent.
- (iv) If the two angles and the side common to them in one triangle are respectively equal to the two angles and the side common to them in another triangle, then the two triangles are congruent.

To establish the following propositions :

- (a) If a straight line stands on another straight line the sum of the two angles so formed is equal to two right angles.
- (b) If the sum of two adjacent angles is equal to two right angles, exterior arms of the angles are on the same straight line.
- (c) If two straight lines intersect, the vertically opposite angles are equal.



(d) When a straight line cuts two other straight lines those other two straight lines are parallel if, either

(i) a pair of alternate angles are equal,

Or

(ii) a pair of interior angles on the same side of the cutting line are together equal to two right angles.

(e) If a straight line cuts two parallel straight lines, then

(i) The corresponding angles are equal.

(ii) The alternate angles are equal.

(iii) The interior angles on the same side of the cutting line are together equal to two right angles.

(f) If one side of a triangle be produced, the exterior angle so formed is equal to the sum of two interior opposite angles.

(g) The sum of the angles of a triangle is equal to two right angles.

(h) The sum of the interior angles of a polygon of  $(n)$  sides is equal to  $2(n-2)$  right angles.

(i) If two sides of a triangle are equal, the angles opposite to them are also equal, and conversely.

(j) Congruence of two triangles—SSS.

(k) Congruence of two right-angled triangles.

- (l) If two sides of a triangle are unequal, the angle opposite to the greater side is greater than the angle opposite to the less, and conversely.
  - (m) Any two sides of a triangle are together greater than the third side.
  - (n) Of all line segments that can be drawn to a given straight line from a given point outside it, the perpendicular is the shortest.
2. Constructions with proof :
    - (i) To draw a straight line through a given point parallel to a given straight line.
    - (ii) To divide a line segment into a number of equal segments.
  3. Simple problems based on the above propositions and constructions.

**Text Book**—Mathematics books (Bengali, English, Hindi and Nepali Editions) written and published by West Bengal Board of Secondary Education are the only approved text books.

### Revised Syllabus for CLASS IX

( To be introduced from 1984 )

#### Arithmetic

Marks 15

1. Ratio and Proportion. Applications to simple problems.
2. Percentage. Applications to simple problems.  
(Problems may be solved algebraically)
3. Harder fractions.

**Algebra****Marks 35**

1. Revision of previous work through exercises.
2. Formation of linear simultaneous equations with two variables to represent simple problems.
3. Solution of linear simultaneous equations containing two unknowns. (Cases of non-existence of unique solution to be explained).
4. Graphical representation of linear equations containing one or two variables.
5. Ratio and Proportion.

**Geometry****Marks 35**

1. Revision of previous works through simple exercises.
2. To establish the following propositions :
  - (a) Each diagonal of a parallelogram divides the parallelogram into congruent triangles.

The opposite sides and angles of a parallelogram are equal and the diagonals bisect one another.

- (b) A quadrilateral is a parallelogram if
  - (i) Opposite sides are equal, or
  - (ii) Opposite angles are equal, or
  - (iii) Any two opposite sides are equal and parallel, or
  - (iv) Its diagonals bisect one another.
- (c) If there are three or more parallel lines and the intercepts made by them on any one straight line that cuts them are equal, then the corresponding intercepts on any other straight line that cuts them are also equal.

(d) The straight line, drawn through the middle point of one side of a triangle parallel to another side, bisects the third side and is equal to half of the second side. The line segment joining the middle points of two sides of a triangle is parallel to the third side and is equal to half of it.

(e) (i) Parallelograms on the same base and between the same parallels ( or of the same altitude) are equal in area.

(ii) Triangles on the same base (or on equal bases) and between the same parallels (or of the same altitude) are equal in area.

(iii) Triangles having equal area, on the same base and on the same side of it, are between the same parallels.

(iv) If a triangle and a parallelogram stand on the same base and between the same parallels, the area of the triangle is half that of the parallelogram.

(f) (i) The perpendicular bisectors of the sides of a triangle are concurrent.

(ii) The perpendiculars drawn from the vertices of a triangle on the opposite sides are concurrent.

(iii) The bisectors of the angles of a triangle are concurrent.

(iv) The medians of a triangle are concurrent.

3. Pythagoras' Theorem—Statement and demonstration through activity only.



## 4. Constructions with proofs :

- (i) To draw a parallelogram equal in area to a given triangle and having one of its angles equal to a given angle.
- (ii) To draw a triangle equal in area to a given quadrilateral.

## 5. Simple problems based on the above propositions and constructions.

**Mensuration****Marks 15**

- 1. Perimeter and area of a rectangle, a square, a triangle. Area of any rectilinear figure.
- 2. Circumference and area of a circle. (The approximate value of  $\pi$  to be taken as  $\frac{22}{7}$  )  
(only statement of formulae and their numerical applications)

**Text Book :** Mathematics Books (Bengali, English, Hindi and Nepali editions) written and published by West Bengal Board of Secondary Education are the only approved text books.

**Syllabus for CLASS X**

(Introduced from 1978 and to be continued upto 1984)

**Algebra****Marks 35**

- 1. Revision of previous works.
- 2. (i) Simple problems leading to simple quadratic equations that can be solved by easy factorisation.
- (ii) Notion of inequation with graphical representation e.g.

$$a < x \leq b$$

$$c \leq x \leq d, ax + by + c \leq 0, ax + by + c \geq 0$$

The range of values of one of the variables when the other is known.

Areas defined on the xy-plane by inequations of above mentioned types (problems on maximisation or minimisation not to be included).

<b>Arithmetic :</b>	Same as before.	<b>20</b>
<b>Geometry :</b>	Same as before.	<b>35</b>
<b>Mensuration :</b>	Same as before.	<b>10</b>
<b>Trigonometry—</b>	Omitted	

### (For 1983 & 1984)

Algebra :	As in 1982	<b>30</b>
Geometry :	As in 1982	<b>30</b>
Arithmetic :	As in 1982	<b>15</b>
Mensuration :	As in 1982	<b>10</b>
Trigonometry :	As in 1978	<b>15</b>

### Revised Syllabus for CLASS X

(To be introduced from 1985)

#### Arithmetic 15

1. Simple Interest. Applications to problems that may arise in daily life.
2. Profit and Loss. Applications to problems that may arise in family and community activities.  
(Problems may be solved algebraically)

**Algebra****30**

1. Revision of previous work through exercises.
2. Graphical solution of problems involving one or two unknowns.
3. Problems leading to formation of simple quadratic equations with one variable which can be solved by easy factorisation, and their solutions.
4. Simple and simultaneous inequations. Determination of their solution set, use of graphs.
5. Simple quadratic surds ; basic operations on them.

**Geometry****30**

1. Revision of previous work through simple exercises.
2. To prove that
  - (a) There is one Circle and only one which passes through three given points not in a straight line.
  - (b) A straight line drawn from the centre of a circle to bisect a chord which is not a diameter is at right angles to the chord, and conversely.
  - (c) The angle which an arc of a circle subtends at the centre is double that which it subtends at any point on the remaining part of the circumference.
  - (d) Angles on the same segment of a circle are equal. If a line segment joining two points subtends equal angles at two other points on the same side of it, the four points shall lie on a circle.
  - (e) The angle in a semi-circle is a right angle.



- (f) The opposite angles of any quadrilateral inscribed in a circle are supplementary, and conversely.
  - (g) (i) The tangent at any point of a circle and its radius through that point are perpendicular to one another.
  - (ii) The segments of two tangents of a circle from an external point to the points of contact are equal and they subtend equal angles at the centre.
  - (iii) If two circles touch, the point of contact lies on the straight line through the centres.
3. Properties of Ratio and Proportion with reference to geometrical figures.
4. To prove that :
- (a) If a straight line is drawn parallel to one side of a triangle the other two sides are divided proportionally, and the converse. (Proof based on the area proposition should be used.)
  - (b) If two triangles are equiangular, their corresponding sides are proportional, and conversely.
  - (c) If a perpendicular is drawn from the vertex containing the right angle of a right-angled triangle, on the hypotenuse, the triangles on each side of the perpendicular are similar to the whole triangle and to one another.
  - (d) Pythagoras' theorem and its converse.



5. Constructions with proofs :

- (i) To draw a circle circumscribing a triangle.
- (ii) To draw a circle inscribed in a triangle.
- (iii) To draw a tangent to a circle :
  - (a) from an external point,
  - (b) at a point on the circle.
- (iv) To draw common tangents to two given circles.
- (v) To draw the mean proportional of two line segments.

6. Simple problems based on the above propositions and constructions.

**Mensuration**

10

1. Revision of previous work through simple exercises.
2. Surface and volume of
  - (i) a rectangular parallelopiped,
  - (ii) a right circular cylinder, and a right circular cone,
  - and (iii) a sphere.

**Trigonometry**

15

1. Idea of trigonometrical angles :
 

Positive and Negative angles. Measurement of angles in Sexagesimal and Circular measures only. ( $\pi$  radian =  $180^\circ$  to be assumed),
2. Definition of Trigonometrical ratios of an acute angle, Trigonometrical ratios of the following angles :
 

$0^\circ, 30^\circ, 45^\circ, 60^\circ, 90^\circ$ , (except undefined values such as  $\tan 90^\circ, \cot 0^\circ$ ).

3. Trigonometrical ratios of complementary angles.
4. Simple problems on heights and distances reducible to the solution of right angled triangles involving the angles mentioned above.

**Text Book :** Mathematics Books (Bengali, English, Hindi and Nepali editions) to be written and published by West Bengal Board of Secondary Education will be the only approved text books.

✓ **Allotment of marks for final examination at the end of**

### CLASS X

**(for Madhyamik Pariksha from 1976 to 1978 and also for 1984 & 1985)**

		marks
(1)	Algebra ...	30
(2)	Geometry ...	30
(3)	Arithmetic ...	15
(4)	Mensuration ...	10
(5)	Trigonometry ...	15
		<hr/> 100

**(for Madhyamik Pariksha from 1979 to 1983)**

(1)	Algebra ...	35
(2)	Geometry ...	35
(3)	Arithmetic ...	20
(4)	Mensuration ...	10
		<hr/> 100

**(for Madhyamik Pariksha from 1986 onwards)**

(1)	Algebra	...	30
(2)	Geometry	...	30
(3)	Arithmetic	...	15
(4)	Mensuration	...	10
(5)	Trigonometry	...	15
			<hr/> 100

### **Guidelines For Text books On Mathematics**

#### **General Instructions**

(Revised syllabi introduced for classes VI, VII & VIII in 1981, 1982 & 1983 respectively and those to be introduced for Classes IX & X in 1984 & 1985),

Keeping the aims and objectives stated in the syllabus the textbook writers should follow the following guidelines :

1. The first thing that should be attempted is to motivate the pupil to learn the principles involved in each particular technique or method. For this purpose a situation may be posed by a problem. For instance, while introducing division of a number by a fraction, an example like the following may be set at the start.

'How many pieces of rope, each of  $2/5$ th metre in length, can you cut off from a piece of 2 m. long rope ?'

Given a yard stick  $2/5$  m. in length the student may easily cut off the pieces from the rope in question and find

that the number of such pieces is five. The pupil may then be led to the discovery that his physical operation corresponds to the mathematical operation of division of a number by a fraction.

One may then proceed to show and explain why and how in this case the operation of division boils down to the operation of multiplication of the dividend by the reciprocal of the divisor.

2. The basic principle underlying every new topic and the relevant methods of operation should be properly presented. Relations between different topics should be pointed out whenever possible.

3. Activities and the use of teaching aids like charts, models, tables, etc. may also be indicated where necessary.

4. A few examples illustrating each basic principle, should be worked out, but the number of such examples, should be restricted to 4 or 5 followed by set of 20 to 25 sums set for the pupil to work out. For an exercise of fewer sums the numbers of worked-out example should be proportionately reduced. A miscellaneous exercise of assorted problems may be set at the end of a book on each subject for a class.


5. All sums set in an exercise should be properly graded and arranged in order of increasing difficulty.

6. Problems, both worked-out and those set in the exercise, should be drawn from life situations of common people as far as practicable.



7. Revision of previous work, whatever indicated in the syllabus, should be done only through examples set in exercises and no worked-out sum should be incorporated for the purpose. The sums are to be so chosen as to enable the pupil to re-call the principles and methods they are supposed to have already learnt in previous class, and in particular to be restricted to such items which they may have to use later.

8. The above guidelines are only illustrative but not exhaustive. The restrictions imposed, however, must always be adhered to.



**Special Instructions****Details of scope and limits of****different topics****CLASS—VI****ARITHMETIC (70 marks)**

1. Problems should be restricted to the following items with a view to prepare the pupils for the corresponding topics to be introduced in this class :

(a) Problems on the use of common metric measures should generally be restricted to those involving milimetre, centimetre, metre and kilometre ; gram, kilogram and quintal ; litre and mililitre. It should be indicated that conversion of one unit to another be done at this stage shifting the decimal point.

(b) Problems on prime numbers, factorisation and composite number should form a set for exercise

(c) The method of finding H.C.F. and L.C.M. by factorisation should be reinforced through examples.

(d) Knowledge of fractions and the basic operations on them should be drilled through examples.

(e) Terminating decimals and basic operations on them should be drilled through examples.

(f) Problems on Unitary method should be such as would admit direct application of the method.

(e) For each of the above six items an exercise of problems not exceeding 15 may be set.

2. H. C. F. and L. C. M.—Under this head the following topics should be introduced one after another :

(i) Divisibility tests by 2, 3, 4, 5, 6, 7, 8, 9, 10 and 11.

(ii) Factorisation of numbers consisting of not more than 5 digits. The method of taking the common prime factor out of more than two numbers should be explained here.

(iii) H. C. F. of numbers consisting of not more than 5 digits.

(iv) L. C. M. of numbers consisting of not more than 3 digits.

(v) The relation : 'Product of H. C. F. and L. C. M. = product of the two numbers' should be explained.

Problems on direct application of the above five items should be set in exercises.

'In Bengali both F (abbreviation for factor) and M (abbreviation for multiple) are indicated by the same abbreviation গু. The difference between গু for গুণনীয়ক and গু for গুণিতক should be first impressed on the minds of the learners.

### 3. Fractions :

The following topics should be introduced :

(i) Reduction of fractions to lowest forms.

(ii) Comparison of fractions by converting each to their lowest common denominators.



(iii) Addition and subtraction of fractions using L. C. M. of their denominators.

(iv) Addition and subtraction of mixed numbers.

(v) Multiplication and division.

(vi) Compound fraction, e.g.  $1/3$  of  $\frac{3}{4}$ , Complex fraction of the type  $(3/4)/(5/6)$  and its conversion to simple fractions.

(vii) Combined operations on fractions of such problems.

#### 4. Decimals :

(i) order relations,

(ii) addition and subtraction of decimal fractions upto 3 places of decimals,

(iii) multiplication and division ; each of the multiplicand, the multiplier, the dividend and the divisor should be a number with not more than 3 places of decimals,

(iv) combined operations and problems,

(v) conversion of fractions to decimals : examples to illustrate that fractions are terminating decimals if the prime factors of the denominators are 2-and / or 5. Conversion into terminating decimals upto 6 places. Conversion into recurring decimals of fractions with denominators whose prime factors are 3, 7 and 11, (problems which may involve more than six places of decimals should be avoided).

5. Extraction of square root by factorisation. Square root of only those numbers whose prime factors do not exceed 11. Applications to simple problems.



6. Unitary method—Solution of problems on profit and loss, time and work by direct applications of the unitary method. Use of percentage in determining profit or loss is excluded at this stage.

Time and work : direct application to problems involving two elements only. Capacity of each agent of work will be assumed to be the same.

### GEOMETRY (30 marks)

1. (i) Acquaintance with solid and plane figures. While copious illustrations in pictures, sketches and drawings should be set in the body of the book, preparations of models and collection of the suitable common objects for the purpose may also be indicated.

(ii) Illustrations in pictures and sketches should make it clear what a plane means and that two planes intersect along a straight line. Paper folding and other suitable activities may also be indicated so as to reinforce this idea of a straight line. It should also be pointed out that in drawing a straight line on a plane sheet of paper, we mark the line along which the plane of the edge of a ruler intersects the plane of the sheet of paper. Once the correct understanding of a straight line is thus deeply imprinted on the pupils mind, it should be shown by drawings and pictures (of non-parallel straight lines) that two straight lines meet or intersect at a point;)

At this stage the pupils should be introduced to the use of the ruler and the set-squares. Suitable illustrations and descriptions may be provided for the purpose.

Care should be taken to avoid such descriptions that may be construed as definitions of three *undefined* terms under reference.

(b) Paper-folding and/or the use of the ruler on a plane sheet of paper may illustrate that the line of intersection of two planes passing through two given points is always the same. Conclusions may be drawn from these illustrations

(c) (i) The idea of parallel lines should be introduced through sketches of suitable objects and also through activities with the use of the set-squares.

(ii) It should be pointed out that a straight line extends indefinitely both-ways whereas a line-segment is limited at its two ends.

It should also be made clear that a straight line or a segment thereof is a figure, and that the length of the segment is only its measure. The distinction should be made clear by statement of language if the context does not make it sufficiently clear. Use of separate symbols for indicating a straight line, a line segment and its length should be avoided.

While illustrating an angle, the terms like the *vertex* and the *arms* should be introduced. The symbol  $\angle$  is to be used to indicate that angle as the figure and also as its measure. The distinction may be made clear by the use of language where necessary.

As for classification of angles it is enough at this stage to illustrate and explain the acute, the right, the obtuse and the straight angles in degree measure. In this connection the use of the protractor should be introduced. While illustrating right angles pupils should also be acquainted with perpendicular lines.

(iv) It should be made clear that a rectilinear figure consists of its sides and not the region bounded by it. Classification of triangles and quadrilaterals need not be taken up at this stage.

As regards the circle it should be impressed that the curved figure and/not the region enclosed by it, is the circle and that perimeter of the circle is its circumference. The pupils should be acquainted here with the centre, arcs, chords, radius and diameter of circles.

2 The use of the protractor should be shown earlier under 1 (iii). The use of compass and divider may now be introduced here.

## CLASS—VII

### ARITHMETIC

1. It is to be assumed that the students have learnt the process and principles of converting fractions into decimals.—terminating and recurring. While introducing the reverse process viz. conversion of decimals into fractions examples should be restricted to six places of decimals.

2. It should be explained what exactly a factor of a fraction means.

3. The logic of the method be made clear by suitable presentation. Concrete examples should be set to explain the same.

4. **Time and distance** ; Velocity/speed as a composite unit of time and distance should be explained. Sufficient drill should be provided for change of units. Problems should be



restricted to determining (i) time (ii) distance and (iii) velocity/speed. The concept of relative motion is excluded here.

**“Simple interest”** : methods of finding out interest, amount, principal, time and rate should be treated separately and separate exercise should be set for each of them. Algebraic formulae for interest should be avoided at this stage.

5. Unit of area should be explained first. Problems should be restricted to finding area, length, breadth and perimeter of a rectangle.

## ALGEBRA

1. Algebra should be introduced as an extension of Arithmetic through the use of Symbols. Necessity of using symbols should be shown. What are symbols and how they can stand for numbers in numerical problems should be illustrated by simple examples.

2. Number-line should be amply used. In introducing negative numbers, the idea of opposite direction should be emphasised. Given any direction, there is always a direction opposite to it. If any one of these directions be taken as positive, the other will be negative and vice-versa. Examples indicating directed magnitudes in our daily life are to be given.

Basic operations on integral numbers should be explained with the help of Number-line. Multiplication with negative numbers should be clearly illustrated with the number-line and also with concrete examples. Multiplication of a negative number by a negative number should be explained through concrete examples and the idea of opposites. Algebraic



addition should be introduced through concrete examples. It should be clearly illustrated that  $a - b = a + (-b)$ . Simple examples should be used to illustrate that multiplication is a process of repeated addition. The meaning of co-efficients and powers are to be clearly explained by adequate examples.

3. Sufficient examples are to be given to indicate the significance of the Commutative, Distributive and Associative laws and their applications. In this connection the use of brackets also should be explained.

4. The meaning of algebraic quantities should be explained first. Then should one explain monomials, binomials and polynomials, the term and its co-efficient. In course of introducing addition, similar and dissimilar terms should be explained.

5. The formulae are to be established by multiplication and then illustrated geometrically.

6. Distinction between algebraic and arithmetical factors should be illustrated first. Some worked out examples should be given to show the use of the Commutative, the Associative and the Distributive laws in factorisation.

7. Problems are to be selected from the situations well known to the pupils. Emphasis is to be given on expressing a problem from ordinary language in terms of mathematical language. The idea of a variable should be explained. Formation of equation from simple problems should be illustrated. The process and principle of solution of equation should be explained and drilled through exercises.

## GEOMETRY

1. A text book should indicate that translation and rotation of material bodies are possible without change of their size and shape. Hence also the trace of the base of material bodies on a sheet of paper will remain unchanged in size and shape under translation and rotation.

The initial and final position of displaced bodies and also of geometrical figures, and their relations with the direction of translation and of rotation should be clearly explained.

In these connections the use of reflection and/or paper folding to demonstrate translation and rotation may be explained.

It should also be pointed out that if a line be translated from the position AB to another position CD then the lines AB and CD are parallel.

2. (i) & (ii): These should be demonstrated through translation.

(iii) & (iv): These should be demonstrated through the use of translation and/or rotation and/or reflection or their combination.

3. Classification of triangles and quadrilaterals should precede the treatment of their constructions. With regard to the classification of quadrilaterals only, the following definitions of a rectangle, a square, a trapezium and a rhombus are to be given :

(a) A rectangle is a parallelogram, one angle of which is a right angle.

(b) A square is a rectangle with two adjacent sides equal.

- (c) A trapezium is a quadrilateral with only one pair of parallel sides.
- (d) A rhombus is a quadrilateral with equal sides and no angle equal to a right angle.
- (i) This should be restricted to construction of quadrilateral :
  - (a) with four sides and a diagonal given,
  - (b) with four sides and one angle given,
  - (c) with three sides and the two angles included by them given.

## CLASS—VIII

### ARITHMETIC

The need of taking average should be explained first. Besides problems of simple average, easy cases of weighted average of not more than 3 sets of values may also be discussed and drilled through an exercise containing problems on weighted average.

2. In this connection extraction of square root of numbers like 2, 3, 5 etc. (which are not perfect squares) upto 3 places of decimals should also be discussed.

3. (a) Time and distance : Problems on finding out the time for passing a point or a platform by a Railway Train moving with a given velocity and on finding out the length or velocity of a train passing a point or a platform, may be introduced in this class. Simple idea of relative velocity of two bodies moving either in the same or the opposite direction may be introduced in this class.



(b) **Time and work** : Problems involving 3 elements such as time, work and agents may be introduced in this class. Stress should be laid on proper choice of unit in special cases.

## ALGEBRA

1. Arrangement of polynomial in ascending or descending order of a variable should be shown. The technique of placing like term in a vertical column and multiplication by the method of detached co-efficient may be fully explained. In case of division also the method of detached co-efficients should be included. Cases of in-exact division, the complete quotient and the remainder should be properly illustrated.

2. It should be indicated how the formulae on cubes of binomials should be illustrated through physical representation —using blocks.

3. Harder and cyclic factors are excluded from the syllabus of this class.

4. Expression of the form  $x^2 + (a+b)x + a = (x+a)(x+b)$  should be mostly emphasised. A few examples on expressions with literal co-efficients of the form :

$acx^2 + (ad+bc)x + bd = (ax+b)(cx+d)$  may be given. Expressions of this form with numerical co-efficients should, however, be properly drilled.

5. The method of division should be applied in the case of H. C. F. only.

6. Care should be taken to set such fractions for operation whose numerators and denominators admit of factorisation by the application of the laws and formulae introduced so far.



7. The general methods should be emphasised. Special type of equations of the form :

$$\frac{(x-a^2)}{(b^2+c^2)} + \frac{(x-b^2)}{(c^2+a^2)} + \frac{(x-c^2)}{(a^2+b^2)} = 3$$

should be avoided.

## GEOMETRY

Besides the four properties (i)—(iv) which are to be taken as axioms, all other relevant concepts formed in the previous classes should be given in a list at the start.

Explanation and definitions of (i) supplementary angles, (ii) complementary angles, (iii) internal and external bisectors of an angle, (iv) a transversal, (v) alternate angles, (vi) interior and exterior angles, (vii) interior opposite angles (viii) corresponding angles etc.—should be given at the beginning.

As an introduction to deductive geometry the following should be explained: Geometrical propositions; theorems and constructions; four parts of a Geometrical proposition; a corollary.

## CLASS—IX

### ARITHMETIC

1. Under this head the treatment should be restricted to (i) rule of three, (ii) problems on mixtures and (iii) partnership problems.

2. That the principle of percentage follows from the principle of ratio and proportion should be emphasised.

3. Reduction of complex and compound fractions to simple forms. Highly complicated and time consuming sums should be avoided.

## ALGEBRA

1. The exercise should consist of only formation of equations from problems.

2. The exercise should be for solving given equations. The methods of (i) substitution, (ii) Comparison, (iii) Elimination and (iv) Cross-multiplication are to be explained.

3. The treatment should provide acquaintance with axes, quadrants, sign conventions, co-ordinates and plotting of points.

Equations of axes :  $x=0$ ,  $y=0$  and equations of lines :  $x=\text{constant}$ ,  $y=\text{constant}$  ; representation of linear equation of the form :  $ax+by+c=0$ , should be discussed.

4. Under this head the following should be treated ; alternendo, addendo, invertendo, componendo and dividendo with their applications.

## GEOMETRY

1. (a) The first part should be treated as a theorem. The latter part may be shown through two corollaries.

(b) Before taking up the theorems on area, the pupils should be reminded that the area of rectilinear figure means the area of its interior region including its sides.

## MENSURATION

1. The formula for the area of a triangle ( $\frac{1}{2} \times \text{base} \times \text{altitude}$ ) should be arrived at from the two corollaries given below :

(i) If a parallelogram and a rectangle have the same base and same altitude, their areas will be equal.

(ii) If a rectangle and a triangle have the same base and same altitude, then the area of the triangle will be half that of the rectangle.

The formula for the area of the triangle :

$$\Delta = \sqrt{s(s-a)(s-b)(s-c)} \text{ will be assumed.}$$

Area of any rectilinear figure will be obtained by splitting it into triangles, rectangles, trapeziums etc.

## CLASS—X

### ARITHMETIC

Both the topics mentioned in the syllabus should be treated in terms of rate per cent. Under 'simple interest' a separate exercise for each of the following should be set : Finding out (i) interest, (ii) principal, (iii) amount, (iv) time, (v) rate and (vi) solution of problems of mixed type.

### ALGEBRA

For determination of solution sets, graphs are to be used where necessary.

It should be clearly understood that the purpose of giving a very rudimentary idea of quadratic surds like  $\sqrt{2}$ ,  $\sqrt{3}$ ,  $\sqrt{5}$



etc. is to prepare the pupils to take lessons in the elements of trigonometry. No attempts should therefore be made to treat surds in all their aspects. Only simple basic operations will suffice.

## MENSURATION

The work should althrough be done on the basis of assumed formulae.

## TRIGONOMETRY

The objective of the syllabus is to give just a working knowledge of trigonometrical ratios and their simple applications. No separate chapter for exercise on trigonometrical identities is required for the purpose.



## SYLLABUS IN LIFE SCIENCE

Life Science is to be studied in the school with the idea to have a correct perspective of human being in relation to the environment and other forms of different patterns of life as exemplified by the plants and animals. The common, as well as different, phenomena of life in relation to the structural and behavioural peculiarities are to be integrated in such a manner as to depict a composite and corroborated picture in which man himself forms the central figure. Isolated topics have been selected emphasizing demonstrable examples that will lead to the development of integrated scientific attitude, as well as comprehensive understanding of Science in general and Life Science in particular.

The syllabus of the Life Science has been drawn with a view to teaching the students the use of their sense organs as well as to develop the proper perspective of man in relation to other organisms and also in reference to environment in which he lives. The course content has been mainly drawn to form a solid broadbased foundation during the study in Classes VI, VII and VIII and ultimately to lead to a comprehensive idea of the whole subject during the study in classes IX and X. In arranging the topics care has been taken to see that the various items are interrelated in such a manner as to present a composite rather than a detached idea about the individual items.

Proper implementation of the syllabus will depend much on the quality and the attitude of the teachers. The spirit of the syllabus rather than its language should be the guiding principle in teaching the subject. Interests and inquisitiveness in the mind of the students should be aroused so that this may

be channelised and directed ultimately to the study of the science of which he himself forms the central pivot. Teaching of the basic principles should be imparted in the theoretical as well as in practical classes.

Laboratory facilities in the shape of specimens, charts, models, instrument and other apparatuses should be made available to the students.

Arrangement should be made for field study which, in fact, forms the crucial point in the study of Life Science.

The syllabus has been drawn on the basis of 375 periods of work in five years against 486 periods available for the subject. The remaining 111 periods should be utilised in field study, collection and preservation of materials and performance of Project Experiments by the students themselves.

## LIFE SCIENCE

### SYLLABUS FOR CLASS VI (From 1981)

#### THE OBJECTIVES OF THE STUDY OF LIFE SCIENCE :

1. To awaken pupil's curiosity and interest in the plant, insect and animal life around him in his environment.
2. To form in the pupils habits of accurate observation and of testing knowledge by experiment.
3. To arouse awareness in the pupils of mutual interdependence of life-forms in nature and their relationship with the environment as a whole.
4. To give pupils an intelligent and appreciative insight into the working of the life processes in nature's kingdom.

5. To kindle pupils' love for fauna and flora.
6. To develop in the pupils of upper forms a spirit of research with a view to enriching human life.

## SYLLABUS IN LIFE SCIENCE

	No. of <u>Lessons</u>	<u>Pages</u>
1. Student and his environment :		
(A) Explanation of the idea of environment.		
(B) Components of environment : Abiotic and Biotic-Explanation of these terms	2	1
(a) <b>Abiotic</b> -Light, air, water, temperature, Inorganic and Organic components and Soil ...	3	2
(b) <b>Biotic component</b> :		
(i) Autotrophes—green plants		
(ii) Heterotrophes—animals		
(iii) Saprotrophes—Macro & micro organism, Fungus, Protozoa (All the terms to be deduced from observation on the examples)	3	2
(c) Difference between living and non-living forms citing common examples and diagrams.		
(i) Locomotion and movement,		
(ii) Irritability,		
(iii) Nutrition and Growth,		
(iv) Reproduction,	4	2
(v) Life cycle.		
	<hr/> 12	<hr/> 7



2.	Basic external structures of Plant and animal—		
	(a) Pea plant.		
	(b) Man (specific description of the object not required)	... 2	3
3.	Habits and Habitats of some animals through observation of the following animals — Dog, Cat, Cow, Crow, Pigeon, Fish (Rohu) (description not required)	... 6	4
4.	Habitat and nature of the following plants — Jaba, Gourd, Mango, Water hyacinth	... 3	3
5.	General idea about (a) Lotus, (b) Peacock & (c) Tiger—(Habits and habitats, spot indentifying characters and importance)	... 5	4
6.	Observation of living objects with an eye to the training of sense organs of the students leading to general inference (structures of the organs not needed) Outline of the functions with reference to following items :		
	Eye— (a) Number of the objects		
	(d) Size and shape, b) Distance,		
	(d) Colour and other structural features.		
	Nose—(a) Recognition of smell.		
	Ear— (a) Recognition of the sound,		
	(b) Direction of the sound,		
	(c) Distance of the sound,		
	Tongue— Recognition of the different types of the taste (sweet, bitter etc.		
	Skin— Touch and temperature.	... 4	4
		20	18



7. Observation of Plants and animals through simple experiments :  
(use of instruments-not desirable).  
(a) Requirement of light in case of plants ;  
(b) Oxygen in case of animals ;  
(c) Food and Water in case of plants and animals. ... 5 4
8. Recognition of the following plants and animals with spot identifying characters and their placement into different groups: characters not more than 3).

**A-Plants :**

Mango, Jackfruit, Tamarind, Banyan tree  
Water hyacinth, Jaba, Pea, Gourd, Lotus,  
Coconut, Paddy, Palmyra palm, Sugar cane,  
Grass, Bamboo, Plantain, Pine, Fern, Moss,  
Spirogyra, Mucor, Agaricus (flowering and  
non-flowering, Dicot-Monocot). ... 6 6

**B-Animals :**

- (a) Mammals—Man, Monkey, Dog, Cat, Cow, Goat.  
(b) Birds —Pigeon, Crow, Peacock.  
(c) Reptiles—Lizard, Snake, Turtle, Crocodile.  
(d) Amphibia-Frog, Toad.  
(e) Fish—Rohu, Catla, Lata, Singhi, Magur, Koi.  
(f) Molluse—Snail, Mussel.  
(g) Arthropod—Prawn, crab, cockroach.  
mosquito, spider, scorpion, millipede.  
(h) Annelids—Earth worm, Leech. ... 12 10
- 
- 23 20

100 pages (55 pages reading matter and 45 pages illustration, diagrams and questions.

Printing-Pica type, size of the book 1/16 double demy, size of the diagram 3" × 2" minimum).

**Illustration** – Suitable illustrations in all items should clearly indicate the special features noted against the items contained in the syllabus.

## SYLLABUS IN LIFE SCIENCE FOR

### CLASS VII

(From 1982)

### SEEDS AND THEIR GERMINATION :

	<i>Pages</i> <i>(including diagram)</i>
<b>A. Seeds :</b>	
(i) Structure of one Dicot seed (Pea)	
(ii) Structure of one Monocot Seed (Maize)	... 2
<b>B. Germination :</b>	
(i) What is germination ?	
(i) External conditions necessary for germination (Temperature, Moisture, Oxygen)	
(iii) Three pea experiment to demonstrate the conditions of germination.	... 4

## II. EXTERNAL STRUCTURE OF PLANTS

	<i>Pages</i>
<b>A—Root :</b>	<i>(including diagram)</i>
(i) Root is the decending prolongation of radicle.	
(ii) Kinds of roots (Tap root and Fibrous root)	
(iii) Regions of a tap root and their functions.	
(iv) Normal functions of root	... 3
<b>B - Stem :</b>	
(i) Elongation of plumule is shoot. Stem is a part of the shoot system.	
(ii) Different parts of stem-node, internode, bud (apical and axillary)	
(iii) Types of stem (mention distinguishing features of herb, shrub and tree with examples and mentioning habitat).	
(iv) Normal functions of stem.	... 4
<b>C—Leaf :</b>	
(i) Leaf is a lateral part of shoot system,	
(ii) Parts of a petiolate dicot leaf including its venation (Types of venation not required)	
(iii) Types of leaf-simple and compound-pinnate and palmate (details not required)	
(iv) Normal functions of leaf	... 6
<b>D—Flower :</b>	
(i) Parts of a complete flower with their functions (Calyx, Corolla, Androecium and Gynoecium) Example : regular-Jaba, Dhatura or irregular- Pea or Aparajita	... 6

	<i>Pages</i>
(ii) Types : (a) complete-Bak (including diagram)	
(b) incomplete-Gourd	

**E—Fruits :**

Structure of fruit, example-Mango	... 1
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**III GROSS EXTERNAL FEATURE OF ANIMALS**

(i) Cockroach	
(ii) Fish (Rohu)	
(iii) Toad	... 6

**IV. OUTLINE IDEA OF THE IMPORTANCE OF THE FOLLOWING PLANTS AND ANIMALS**

with reference only to the portion/products used

**A—Plants :**

(i) Cereals : Paddy, Wheat, Maize.	
(ii) Pulses : Pea, Gram, Masur, and Moong	
(iii) Jute, Cotton, Sal, Shegoon (Teak), Coconut, Mustard	... 10

**B—Animals :**

Honey bee, Silkworm, Fish, Poultry, bird and Cow.	... 4
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**V. A—Outline Knowledge of Medical Value of the following plants :**

Penicillium, Sarpagandha (Roulfia), Cinchona, Vasaka, Tulsi, Kalmegh	... 3
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**B—Pest and Disease Producing Animals :**

Fly, mosquito and rat (habit, habitat-role in the propagation of diseases and outline ideas about their control measures)	... 6
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**VI. A—Demonstration of the following specimens, or model and charts : (Mentioning their nature with not more than three spot indentifying features)**

**(i) Plants :**

Radish, Carrot, Beet, Proproot, nodal root, marginal root, Sweet potato, Potato, Onion, Ginger, Corn (OL), Flowers of Pea or Aparajita, Gourd, Tube rose, Pea fruit, Pineapple. ...8

**(ii) Animals :**

Sponge, Jellyfish, Tape worm, Round worm, Prawn, Spider, Scorpion, Centipede, Millipede, Land snail, Apple snail, Fresh water mussel, Starfish, Shark, Rohu, Lizard, Tortoise, Snake, Pigeon, Rat, Bat. ...8

**VII. Observation and recording by the students of the germination of (a) Pea, (b) Gourd and (c) Maize.**

**VIII. Observation and recording of the common specimens mentioned in the Course content in the surrounding.**

Text	—47 Pages
Exercises	—19 „
Diagram	—24 „

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Total—90 Pages

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(Suitably Illustrated, printing : pica type,

Size of the book—1/16 Double Demy

Size of the diagram—3"×2" minimum)

**SYLLABUS IN LIFE SCIENCE FOR**  
**CLASS VIII**  
**( From 1983 )**

	<i>Pages</i> <i>(including diagram)</i>
<b>1. Unit of Life :</b> Outline idea of a Cell-Light micro- pic structure indicating cell membrane and cell wall, Cytoplasm, Nucleus, Centrosome, Plastids, Vacuoles, Mitochondria and Golgi body	...8
<b>2. Organisation of living body—</b> (Plants and Animals) Tissue-Deflnition and explanation	
A. Plant tissue-Outline idea of Meristematic and Permanent tissue (Classification of meris- tematic tissue not required).	
<b>Permanent tissue—</b>	
<b>(a) Simple—</b>	
(i) Parenchyma (structure, occurrence, function)	
(ii) Collenchyma	-do-
(iii) Sclerenchyma	-do-
<b>(b) Complex —</b>	
(i) Xylem (components, occurrence and function)	
(ii) Phloem	-do- ...8
<b>B. Distribution of tissues in root, stem and leaf of typical young dicot plant</b>	
<b>C. Animal tissue :</b> Outline, classification of different types	
<b>(a) Epithelial (Definition, occurrence and function)</b>	
(b) connective	-do-
(c) Muscular	-do-
(d) Nervous	-do- ....17

**D. Organs and Systems of Animal**      *Pages*  
(including diagram)

**Type : Toad—**

Alimentary, Circulatory (detail description of arterial and venous system not required), Respiratory, Excretory, Reproductive, Nervous (mention only Brain and Spinal Cord ; Function Co-ordination)	[Frequent reference will have to be made to the similar organs and systems in human being] ...	26
[Functions of the different systems should be mentioned in outline only]		
3. Simple idea of Diffusion, Osmosis, Absorption and Transpiration through experimentation ...		17
4. Following items should be demonstrated in the Class-through specimens, models and charts)		
(a) Items specified in (1) and (2) in the syllabus.		
(b) Free-hand section cutting method-Root, Stem, Leaf of a typical young dicot plant ...		2
5. Free-hand transverse section cutting of a young dicot stem by the students.		
6. (a) Experimentation and recording of Diffusion, Osmosis and Conduction.		
(b) Observation and recording of the external features of Toad.		
Text		—45 pages
Diagram		—33 pages
Exercises		—12 pages
		<hr/> Total—90 pages

(Suitably illustrated, printing : Pica type

Size of the book-1/16 Double Demy

Size of the diagram-3" × 2")



## THE SYLLABUS IN LIFE SCIENCE FOR CLASS IX & X AND GUIDELINES FOR TEACHING THE SUBJECT

(for Madhyamik Pariksha, 1979 and onwards  
for Regular Candidates)

(Aims and objectives—The teachers should acquaint the students with the aims and objectives of learning Life Science. No question will be set from this topic.

The Syllabuses as detailed below will be taught in Classes IX and X and questions will be set from these topics.

### CLASS -IX

#### 1. Significance of Photosynthesis and Respiration :

(a) **Photosynthesis**—Definition and explanation. Components) Only  $\text{CO}_2$ , chlorophyll, sunlight, water) and their sources, Mesophyll tissue—as the site of photosynthesis.

**Mechanism**—Overall reactions only (Dark and light reaction not to be mentioned). Mention of splitting of water to show only the liberation of  $\text{O}_2$ .

**Significance**—Entrapping of solar energy and its conversion to potential energy in food. Conversion of glucose to starch and its transport to storage organ.  $\text{CO}_2$ — $\text{O}_2$  balance in the environment.

(b) **Respiration** :—Definition and explanation. Site of respiration. Simple idea about the differences between respiration and combustion. Simple idea about anaerobic, aerobic respiration (Detail process and chemistry of respiration are not required). Difference between anaerobic respiration and fermentation. Sources of Oxygen. Lack of definite respiratory organs in plants. Mention definite respiratory organs such as



skin or body surface (in some cases), gill, trachaea, lung in animals.

Significance—Release of energy ;  $O_2$ — $CO_2$  balance.

## 2. Nutrition : Metabolism and Digestion, Food, Vitamins, enzyme, minerals and water.

**Nutrition :** Its importance.

**Food**—as source of energy. Types—Carbohydrates, Fats, and proteins—their sources and importance in nutrition : minerals : Fe, Ca, P, Iodine. Na, K, Mg, Vitamins : Its importance. Plants manufacture their vitamin.

(Vitamin D is synthesised in man with the help of sun-rays)

A, B—complex, C, D, E, K—sources of these vitamins and their deficiency symptoms in man chemical nature not required.)

**Water**—Its importance.

**Plant nutrition**—Autophytes and Heterophytes (Definition, and example) essential major elements : C, H, O, N, S, P, K. Mg. Ca and Fe—their sources. Mention there are few other elements like B, Mo, Cu, Zn, Mn which are required in traces.

**Animal Nutrition :** Phases (Ingestion, Digestion, Absorption Assimilation and Egestion along with the names of the structures concerned), Group names of enzymes (Proteolytic, Lipolytic and Amylolytic) and their actions on food (names of individual enzymes not needed).

**Balance diet**—Definition only. Total average calorie requirement of an adult.

**Metabolism**—Anabolism and catabolism. B. M. R. (Definition only).

**3. Circulation and Blood:** Circulation and its utility : Medium of transport. Elements to be transported (Food, Vitamins, Minerals,  $O_2$ ,  $CO_2$ , hormones and metabolic wastes).

Mechanism of circulation.

- (a) **Plants**—Ways of Transport—Osmosis, diffusion of water and solutes ; Ascent of Sap through Xylem ; Transpiration ; Translocation through Phloem. The above processes are to be mentioned only to explain the phenomenon of transport. Details of these processes are not required.
- (b) **Animals**—What is circulatory system ? Mention with examples. Open and closed type of circulation. Circulating fluid : Blood—Fluid tissue (connective tissue).

Enumeration of components (R. B. C., W. B. C.) Thrombocyte and Plasma (details not needed). Respiratory pigments. Blood groups in elementary way. — Mention haemoglobin and Haemocyanin). Functions of Blood—Transport of nutrient, vitamins,  $O_2$ ,  $CO_2$ , hormones, metabolic wastes, coagulation, immunity, protective function and regulation of temperature.

Mention lymph and its importance. Components of circulatory system—Heart, Artery, Vein, Capillary. No description of individual system. Mention rhythmicity of heart and valves as regulatory structures. Diagrammatic representation of human heart and blood circulation through it.

#### **4. Movement and locomotion :**

Difference between movement and locomotion. Purpose of locomotion. Locomotion in Amoeba, earthworm,

cockroach and fish. (Details of structure and mechanism not needed). Bipedal locomotion in man (Structure and mechanism not needed), Absence of locomotory organs in majority of plants. Types of movements in plants : (i) Tactic, (ii) Tropic and (iii) Nastic. Tropic—Phototropic, Geotropic and Hydrotropic.

(Details of tactic and nastic movement not needed).

### 5. Excretion—Definition and explanation :

**Plants :** Means of removal of excretory products :  
Mention of shedding of leaves and bark.  
Types of excretory products and its economic importance only—gums, resins, alkaloid and latex.

**Animals :** Kidney as excretory organ—mention nephron as structural and functional unit of kidney.  
Excretion of nitrogenous waste through kidney after reabsorption of essential substance.

### 6. Soil, Virus and Microbes :

(a) **Soil**—formation, types of soil according to the origin :—residual and transported. Composition of the soil : soil particles, minerals, humus, water, air and soil organism.

Types of soil : Bare outline composition of the following :

sandy, clayey, loamy, silty, humus, saline.

Crops associated with different types of soil.



(b) **Virus and microbes :** virus, bacteria fungi and protozoa

Beneficial bacteria— Azotobactor, Rhizobium,  
Clostridium

Beneficial virus — Bacteriophage

Harmful bacteria — Cholera, T. B., Typhoid

Harmful virus — Influenza virus

Fungus (beneficial)— Penicillin and yeast

Fungus (harmful) — wheat rust and late blight of  
potato

Protozoa-harmful — Malaria parasite and  
Entamoeba.

### CLASS—X

#### 1. Introduction to Nervous System and Sense Organs. (Detailed description not required)

A. **Nervous system :** Function-co-ordination.

Components of nervous system :—

Neurone— structural and functional unit ;

Nerves — afferent and efferent types, synapse,  
reflex action with common examples, ganglion.

Central Nervous system (Brain and spinal cord)

Elementary idea of brain, naming of (a) Fore-brain

(b) Mid-brain (c) Hind-brain,

Absence of nervous system in plants to be mentioned

B. **Sense organs with reference to human being.**

(a) **Eye**— structure of eye should be treated in an elementary way with reference to eyelids, conjunctiva, cornea, lens, iris and pupil, sclera, choroid, retina—their respective functions in outline. Mention the presence of tear gland.



- (b) **Ear**—Elementary idea about outer, middle and inner ear. Transmission of sound waves—Eardrum to internal ear through bones (Structures not required) : Function : Hearing and balancing (Mechanism not needed).
- (c) **Tongue**—Detection of food taste in the tongue with the help of taste buds.
- (d) **Nose**—As an organ to smell (structure not needed)
- (e) **Skin**—Sensory organ (histological structure not needed).

## 2. General idea about hormones :

Chemical co-ordination. Site of formation and action. Group names of Plant hormones : Auxins, Gibberellin and Kinins-Practical application of hormones in agriculture.

Animal hormones : Site of secretion and functions of the following hormones in man :

- (i) Pituitary hormones : (1) A C T H, (2) S T H, (3) T S H, (4) G T H
- (ii) Insulin (Islets of Langerhans of Pancreas)
- (iii) Thyroxin (Thyroid)
- (iv) Adrenalin.

## 3. Cell division and significance (Mitosis and meiosis (outline stages), Details not required.

Cell Division : Definition and explanation. Mention only chromosome, chromatid, centromere, D. N A, gene

Mitosis : Definition, occurrence, 4 stages (prophase, metaphase, anaphase and telophase) cytokinesis.

Significance—qualitative and quantitative equal division, increase in length and volume of the body as well as repair of body.

Meiosis : Definition, occurrence (Stages not to be mentioned) Significance—reduction in number of chromosomes, exchange of segments, change of material leading to recombinations and variation.

#### 4. Growth and reproduction.

##### (a) **Growth** —Definition and explanation :

Factors - Hormones, Food, Air, Water, Light and Temperature. Region of growth in plants and animals.

##### (b) **Reproduction**—Definition and importance. Different types of Vegetative reproduction including cutting and grafting, Asexual, Sexual, Parthenogenesis (Definition and examples) Sexual reproduction in flowering plants mentioning the structures concerned Sexual reproduction in a vertebrate mentioning toad with reference to testis and ovary fertilisation (Anatomy not needed).

#### 5. Heredity : Definition and explanation :

Experiments on monohybrid cross. Mention laws of Mendel. Practical applications of genetics for human welfare ( Mention Paddy, Wheat, Fowl & cow).

#### 6. Evolution (outline idea)

Evolution : Definition and Explanation.

Outline idea about origin of life and gradual complexities.

Evidences : morphological (basic similarity in certain organs like limbs heart and vestigial organs) Palaeontological.

Theories of evolution (an outline) as put forward by Lamarck and Darwin only.

**7. Adaptations as exemplified by specimens mentioned in the course content :**

Adaptation : Definition and explanation : Animal types : Fish and Pigeon. Mention of accessory. respiratory organs in Koi, Singhi, and Magur, Plant types : Lotus, Cactus, Sundari and climbing devices in pea.

**8. Carbon cycle, Nitrogen cycle and Oxygen cycle.**

**9. General idea about Eco system and conservation.**

(a) Eco-system—Explanation and meaning of eco-system. Brief description of biotic and abiotic factors. Food chain and energy flow in eco-system.

(d) Conservation—Conservation and its importance. Brief description of conservation of water, soil and forest. General idea of wild life preservation with special reference to Tiger.

**PRACTICAL WORK FOR CLASSES IX & X**

Practical work should be done by individual student. Class room or any other available space may be used as laboratory whenever suitable laboratory is not available. Keeping in

view the above points the practical work has been designed in the following manner.

**Demonstration :**

1. Simple experiment to show evolution of  $O_2$  during Photosynthesis.

**Practical to be done by individual student :**

2. Bubbling of expiratory air through lime water to show release of  $CO_2$  during respiration.
3. Dissection of general viscera and alimentary system of toad.
4. Collection of Life history stages :—
  - (a) **Mosquito**—Larva, pupa and adult or
  - Butterfly**—Egg, larva, pupa and adult.
  - (b) Collection of different types of leaves.
5. Experiment to demonstrate the increase in the rate of heart beat after exercise. A class work book should be maintained on the basis of above experiments.



## **PHYSICAL SCIENCES**

**(For Regular Candidates)**

### **THE OBJECTIVES OF THE STUDY OF PHYSICAL SCIENCES**

**(As spelt in 1974)**

1. To initiate pupils into the realm of play and interplay of the laws of sciences in life and matter around.

2. To rouse in young mind a spirit of enquiry about the nature of matter and forces in nature.

3. To develop scientific attitude and enable pupils to understand the important scientific principles involved in the natural phenomena around.

4. To enable pupils to understand with insight the application of science to the service of man.

5. To develop respect for the Philosopher—Scientists whose contributions have benefited mankind.

6. To develop in the pupils of upper forms a spirit of research and experiments to probe into the hidden treasure of the science for enrichment of human life and civilization.

**(as spelt in 1978)**

#### **Objectives of the study of Physical Sciences :**

**The students should be acquainted with the following fundamental objectives of learning Physical Science :—**

1. To initiate pupils into the realm of play and interplay of the laws of Sciences in life and matter around.

2. To rouse in the young mind a spirit of enquiry about the nature of matter and forces in nature.

3. To develop scientific attitude and enable pupils to understand the important scientific principles involved in the natural phenomena around.

4. To enable pupils to understand with insight the application of science to the service of man.

5. To develop respect for the Philosopher-Scientists whose contributions have benefited mankind.

[ N. B. Sixth point of the syllabus is deleted ]

**Introduction :** When teaching Science, it is essential that classes are made interesting. This is all the more necessary in lower classes. Otherwise, if once the students begin to be afraid of Science they will never again like it in future. In order to make classes interesting, experiments must be shown in the class as far as possible. If students themselves be taught to perform simple experiments, they will get much more interested in the subject. Then again, presentation of the subject (to students) is very important. Whether classes become dull or interesting, depends mainly upon how the teacher represents the subject to the students. Instead of simply stating facts themselves to the students, teachers should try to get them from students by putting suitable questions. This will encourage students to cultivate the habit of thinking and students will find the subject more interesting.

# SYLLABUS IN PHYSICAL SCIENCES

## ( PHYSICS AND CHEMISTRY )

### CLASS—VII

( Introduced from 1974 )

[ Page limit 80 pages. Double Demy (1/16) Pica type ]

1. What is science ? Science involves observation, systemization of knowledge by observation, measurement and inference.

#### Rest and motion

Scope and application of Sciences in life—Health, Sanitation Food, Shelter, and in general, benefit of mankind. How the thinking of great natural Philosophers through the ages has influenced the development of Science and Technology as we know it to-day. Brief mention of the contributions of Indian Philosopher and Scientists in this direction (short life stories of some eminent Indian Scientists—Acharya Jagadish Chandra Bose, Achraya Prafulla Chandra Roy, Prof. C. V. Raman, Prof. S. N. Bose, Prof. Prasanta Mahalanabis, Prof. Meghnath Saha etc.)

[17 pages]

2. Air—Air has weight Torricellis' short life His observations that a lift pump does not work if the level of water in a well drops below 34 feet—Atmosphere and Atmospheric pressure—Principle of the mercury barometer. What air is composed of ? Oxygen, Nitrogen, small quantities of carbon-di-oxide and water vapour - Elementary idea of elements and simple compounds—Mechanical mixture. Separation of their constituents ( individual properties retained )—Filtration, Separation by magnets, Sublimation, distillation, decantation, Crystallisation etc.

[ 13 pages ]



**3. Water**—Demonstration of Fluid Pressure—Archimedes' Principle—Short life story of Archimedes—Buoyancy, Floation water finds its own level—demonstration and simple applications. [ 12 pages ]

**4. Matter**—Different states of matter (Solids, liquids and gases)—Physical properties of matter ( Density, Hardness, odour, colour, weight, dimensions, volume). Influence of external factors on properties—expansion of a body by heating —gap between rail lines—Ball and ring experiment—Bi-metal strip—its application. Elementary ideas of Physical and chemical changes ( to be illustrated by experiments)—Atoms and molecules—short life stories of Dalton, Avogadro.

[13 pages ]

**5. Gravitation**—Earth attracts all bodies—Force of Gravitation—Falling bodies—dependence on mass and distance—Moon's Gravitation - short life story of Newton occurrence of tides—simple explanation. [ 13 pages ]

**6. Heavenly Bodies and Night Sky**—Observations on the sun, the moons phases and on the night sky—Solar System—Short life stories of Galileo, Copernicus and Kepler. Difference between planets and stars—Rectilinear propagation of light—Experiments—Pin-hole Camera—Formation of shadows—umbra, penumbra—Eclipses ( excluding annular eclipses )—Laws of Reflection of light—simple experiment—Regular and diffused reflection—Periscope. [ 12 pages ]

## CLASS—VIII

( Introduced from 1975 )

[ Page limit 96 pages. Double Demy (1/16) Pica type ]

**1. Air**—Idea of chemical compounds—Individual properties of the constituents lost, new substances with new



properties appear ( $\text{Fe} + \text{S} = \text{FeS}$ )—Air is not an element or chemical compound, but a mechanical mixture—composition of air—Principles involved in ventilation—Rusting—Combustion—Atmospheric conditions, pressure and temperature in the higher regions. Balloon and Aeroplane flight story of wright Brothers—preparation and study of simple properties of  $\text{H}_2$ ,  $\text{O}_2$ —Burning in Oxygen, formation of Oxides—Oxidation and reduction. [ 16 pages ]

2. **Water**—Chemical compound—Electrolysis of Water—chemical composition and chemical decomposition and symbols and formulae of certain common elements and compounds. [ 12 pages ]

3. **Matter**—Elementary ideas—chemical reactions—atomic phenomena. [ 5 pages ]

4. **Carbon**—Allotropic modification—coal, Diamond—Graphite, Charcoal, soot—Carbon Dioxide—Mention of the wide universal presence of carbon compounds in various forms. [ 6 pages ]

5. **Acids and Alkalis**—Elementary ideas of acids and alkalis— $\text{HCl}$ ,  $\text{H}_2\text{SO}_4$ ,  $\text{HNO}_3$ ,  $\text{NaOH}$ ,  $\text{KOH}$ ,  $\text{Ca}(\text{OH})_2$  [ 4 pages ]

6. **Heat & Temperature and transference of heat**—Heat and Temperature—Mercury-in-glass Thermometer (avoid details of construction)—Clinical thermometer. Conduction, convection and Radiation of Heat—simple demonstrative experiments—Examples of good and bad conductors—Thermoflask—convection and air current—simple phenomena explained by difference in radiating ability. [ 15 pages ]

7. **Magnets**—Different types of magnets—their general properties—Demonstrative experiments—How to magnetise a

body ?—Magnetic Induction—Experimental demonstration of—Elementary theory of magnetism—Terrestrial magnetism. Use of magnetic compass. [ 16 pages ]

8. **Electricity**—Electrostatics : Demonstration by combing hair and attracting small pieces of paper—production by rubbing—Insulators and conductors—Explanation by electron theory—Two kinds of charges—Forces between charged bodies—Short life story of Coulomb. [ 7 pages ]

### **Current Electricity—**

Simple voltaic cells—Short life story of Volta—Dry cells—Idea of resistance—Its influence on regulating current (non-quantitative discussion)—Heating and magnetic effects of currents (simple experiments)—Short life stories of Joule, Faraday—Ampere—Simple application of heating—magnetic effects of currents (Simple experiments)—Electric bulb—Electric bell. [ 15 pages ]

## **CLASS—IX**

**Syllabus with the explanatory notes in Physical Science for Class IX and Guidelines for teaching the subject.**

[For Madhyamik Pariksha ( Secondary Examination ) 1979 onwards]

### **(Common to both Physics and Chemistry)**

1. **Systems of measurement. Different physical quantities and their units** Fundamental units and Derived units. F.P.S. & C.G.S. units and relation between the two units of length and mass. Advantages of C.G.S. system or Metric system to be emphasized. Reasons for using different sized units for

measuring a particular quantity to be explained. Importance of mentioning temperature and purity of metals in defining standards of length to be stated.

**Measuring devices :** Ordinary scale, common balance, measuring cylinders, clocks—Elementary idea of sensitivity of a common balance. For measurement of small time interval the use of stop-clocks or stop-watches are to be explained.

**2. Matter and Energy**—Deleted, For Energy Vide Item No. 2 of Physics of Class IX.

**Mass and weight**—Distinction between mass and weight. Mass is measured by common balance, while weight is measured by spring balance.

**Conservation of mass**—Some experiment should be shown and explained.

**Conservation of Energy. Different forms of Energy. Transformation of Energy (non-quantitative treatment)**—Kinetic energy and potential energy. Different forms of energy like heat energy, light energy, sound energy, electrical energy etc. Conservation of energy. Transformation of energy in every day life to be explained. Sun is the most important source of energy on earth.

**3. Change of state. Freezing, melting, boiling, evaporation and condensation. Melting point and boiling point. Factors affecting them**—Constancy of temperature during melting and boiling should be demonstrated by simple experiment. Effect of pressure on boiling and melting point should be discussed. Cutting of ice by metallic wire to be demonstrated Principle of Pressure-Cooker to be explained. Distinction between boiling and evaporation to be explained. Condensation should be



demonstrated by holding a cold plate in front of the nozzle of a kettle in which water is boiling. Formation of dew, fog and cloud should be explained clearly.

**Idea of latent heat**—Cooling by evaporation due to latent heat to be demonstrated by pouring ether or methylated spirit on the hand. Distinction between Volatile and Nonvolatile compounds should be discussed. Cooling of water in an earthen pitcher should be explained. Explanation of other simple cases like cooling of roads, floors, roofs etc. by pouring water.

## PHYSICS

**1. Rest and motion**—Rest and motion with respect to some fixed body. Stress should be given to the point that objects which we observe at rest or moving is a relative term.

**Displacement, speed, velocities and acceleration**—Definitions and illustrations. Distinction between speed and velocity to be explained. Idea of acceleration positive or negative may be introduced from the example of a train gaining speed after start or losing speed before coming to a halt. Units of velocity and acceleration. Simple numerical examples in calculating velocity and acceleration to be discussed. Idea of average speed required. Estimation of distance from velocity and time.

**Newton's laws of motion. Definition of force. (Equations of motion excluded. Rotational motion excluded)** Concept of momentum and force from everyday experience to be explained. Inertia of rest and Inertia of motion to be discussed. Force of reaction with various examples and its application in modern jet planes and space rockets. Points of application of action and reaction to be explained.



## 2. Work, energy and power—potential and kinetic energy.

**Units. (No sum)**—Definitions of work, energy, power and explanation with suitable examples. Relation between power and work. Students should be encouraged to devise simple experiments on the rotation of a wheel by the flow of water or wind. Concept of energy may be demonstrated with the help of a spring.

**Simple machine, inclined plane, wheel and axles and levers (Not mathematical)**—These topics should be explained by actual demonstrations.

## 3. Nature of heat. Heat and temperature

—Distinction between heat and temperature. Celsius and Fahrenheit scales of temperature and numerical examples on conversion.

**Factors determining the quantities of heat**—The idea of specific heat to be given. Idea of 'heat lost = heat gained' to be stated. Dependence on mass, specific heat and difference of temperature to be discussed.

**Heat as a form of energy. Relationship with work**—Production of heat by rubbing to be discussed and the conversion of mechanical work into heat to be explained. "For production of one calorie of heat  $4.18 \times 10^7$  ergs of mechanical work is to be done"—should be stated.

## 4. Source of light. Ray of light. Reflection of light

—Reflection of sunlight with plane mirror should be demonstrated. Laws of reflection and its verification by plane mirror and pins. Regular and diffused reflection. By regular reflection an image is formed. By diffused reflection surface is seen but no image is formed.

**Refraction of light**—Phenomenon of refraction; bending of rays towards the normal and away from the normal. Some

natural phenomena depending on refraction (Laws of refraction need not be discussed)

**Total internal reflection. Explanation of some natural phenomena on the basis of refraction and total reflection —** Conditions of total internal reflection and demonstration in suitable natural phenomena. Explanation of mirage in desert essential. (Mirage in cold region excluded).

**Propagation and velocity of light—**Simple idea of the velocity of light and its high value.

**Convex lens and its focussing action. Focal length. Convex lens as a magnifying glass—**Idea of focal length of a convex lens by focussing the image of a distant object on a wall. (First Principal focus need not be discussed). Magnifying properties to be demonstrated. Distinction between real and virtual images to be discussed.

**Dispersion of light. Spectrum (Demonstration)—**Demonstration of the formation of spectrum with prism essential. VIBGYOR colours with white light.

## CHEMISTRY

1. (i) **Physical states of matter—the three states (reasons excluded). Melting and boiling points—**Elementary idea for the existence of the three states of matter—solid, liquid and gas. Physical properties of matter—Density, hardness, odour, colour, weight, dimension, volume.
- (ii) **Identification of matter—physical and chemical properties—**How matter (solid, liquid and gas) differs in physical properties—touch, colour, smell, solubility,

magnetic property etc., and chemical properties (behaviour on heating, treatment with acids etc.)—

Differentiation of matter by touch (graphite and chalk), smell (ammonia and hydrogen), colour (blue vitriol and chalk powder), solubility (common salt and chalk powder), magnetic property (iron and aluminium), chemical reaction by contact (conc.  $\text{H}_2\text{SO}_4$  and sugar or quicklime and water or white phosphorus and iodine), by heating (Magnesium and platinum wires).

- (iii) **Physical and chemical changes, Factors which induce and regulate chemical change, viz. contact, temperature, pressure, catalysis** Explanation with typical illustrations like slaking of lime, rusting of iron, burning of coal, candle straw, melting of ice, burning of magnesium wire, heating of platinum wire. Acceleration of decomposition of potassium Chlorate by  $\text{MnO}_2$ .

**Exothermic and Endothermic**—Typical examples of Exothermic and Endothermic changes. Demonstration of slaking of lime and dissolution of  $\text{NH}_4\text{Cl}$  or  $\text{NH}_4\text{NO}_3$  in water (N. B. The latter is not a chemical reaction but a physical change).

- (iv) **Elements and Compounds**—At first, the idea of elements, symbols chemical formula and valency to be explained and then the idea of chemical compound to be discussed.

**Metals and Non-metals**—Basic characteristics with examples.

**2. Solution—Solvent and solute : Unsaturated and saturated solution. Solubility and its relation with temperature**—Demonstration of different types of solutions, unsaturated and



saturated. Effect of temperature on solubility. Solubility curve need not be discussed.

**3. Symbols, formulae**—Symbols and formulae of certain common elements and compounds.

**Chemical equations : Significance of chemical equations and balancing simple equations.**

**4. Electrolysis**—Electrolysis of water may be demonstrated either with a voltameter or may be demonstrated by dipping in acidulated water two bare wires connected to D. C. mains or to a battery.

**Electrolytes and Non-electrolytes-Decomposition of water**—Elementary idea of electrolytes and non-electrolytes.

**Electroplating**—Electroplating with copper may be demonstrated.

**5. Ideas of acids, bases and salts**—Elementary ideas of acids, and alkalis— $\text{HCl}$ ,  $\text{H}_2\text{SO}_4$ ,  $\text{HNO}_3$  &  $\text{NaOH}$ ,  $\text{KOH}$ ,  $\text{Ca}(\text{OH})_2$  (Basicity of acids and acidity of bases are excluded). Formation of normal salts. (Acid and basic salts excluded). Important properties with regard to indicators. Soapy touch of alkalis and sour taste of acids.

**Neutralisation**—Uses of litmus, methyl orange and phenolphthalein as indicators should be discussed. Neutralisation point should be demonstrated. Ionic conception need not be discussed.

**6. Oxidation and Reduction**—Elementary idea with illustrations (excluding electronic concept). Oxidation to be discussed with addition of  $\text{O}_2$ ,  $\text{Cl}_2$ , etc, or removal of hydrogen with illustrations. Also Reduction to be discussed with addition of hydrogen or removal of  $\text{O}_2$ ,  $\text{Cl}_2$  etc. with illustrations.



**7. Liquid air, Nitrogen and Carbon cycle (Elementary ideas) : use of the rare gases in air, Neon lighting—**All topics under the item 7 are deleted.

**8. Simple method of preparation and Properties of Oxygen and Hydrogen—**Preparation of  $H_2$  to be demonstrated. preparation of  $O_2$  by  $KClO_3$  or by any other method, such as decomposition of Sodium peroxide by water Hydrogen is lighter than air, combustible but does not support combustion, reacts violently with Oxygen, producing water. Oxygen is non-combustible, supports combustion. Burning of Carbon, Sulphur and Magnesium in Oxygen.

**Simple method of preparation and properties of Ammonia, Carbondioxide, Sulphuretted Hydrogen—**(N. B. preparation and properties of Nitrogen und Sulphur dioxide are deleted) —Woulfe's bottle to be shown, Preparation of  $CO_2$ ,  $NH_3$  and  $H_2S$  to be demonstrated Demonstration of their simple physical and chemical propeties e. g. solubility of  $NH_3$ ,  $CO_2$  ; basic character of  $NH_3$  ; Oxidation reaction of Oxygen-reducing action of  $H_2$  and  $H_2S$  ; simple precipitation reactions of  $CO_2$  and  $H_2S$ .

**Syllabus with explanatory notes on Physical Science for Class X and Guidelines for teaching the subject.**

[ for Madhyamik Pariksha (Secondary Examination)  
1979 onwards ]

## CLASS—X

(Common to both Physics & Chemistry)

**1. Atomic structure of matter. Elementary ideas of the planetary model of the atom—**Atomic model should be shown. Students should be encouraged to prepare models (atomic, preferably dynamic models, if possible, Similarity and dissimilarity between atomic model and planetary model should be clearly explained.

**Structure of the nucleus—**Constituents (Proton and neutron) only and simple mention of the internuclear force.

**Mass, size and charge of electron, proton and neutron, Isotopes. Atomic numbers, atomic weight and mass number (non-mathematical treatment. Elementary ideas with illustrative examples)—**Size-deleted. Definition of Atomic weight with respect to  $O^{16}$ .

**2 Properties of gases—pressure and temperature. Boyle's and Charles' laws. Avogadro's hypothesis. Avogadro's number Molecular weight—**Only statement and explanation of these laws and hypothesis Simple experimental demonstration of Boyle's law may be made. (Combined gas law equation  $PV=RT$  excluded).

**Brief mention of the motion of gas molecules and dependence of pressure and temperature on such motion. (Very elementary—non-mathematical discussion)—**As an explanatory note this topic of the syllabus is being stated below :

Brief mention of the motion of gas molecules and the dependence of pressure on such motion and the dependence of such motion on temperature ( Very elementary—non-mathematical discussion ).

## PHYSICS

**1. Sources of sound, sound produced by vibration—**Vibration produced by source of sound should be demonstrated by touching light balls (tied at the end of a thread) with a vibrating brass utensil.

**Propagation of sound—**Wave pattern may be demonstrated by any suitable device.

**Necessity of a medium for sound—**Experiment with evacuated Bell jar and electric bell may be demonstrated.

**Frequency and pitch—**Idea of pitch should be explained. Whistling of glass tube ( by blowing air into it ) closed at one end and of variable length may be employed ( or vibration of stretched string may be employed ).

**Velocity of sound—**Principle of determining velocity of sound in open air should be briefly discussed. Just mentioning of different velocities of sound in different media. Calculation of distance of thundering clouds by noting the time interval between the lightning flash and the sound of thunder clap. For measuring time in seconds a wrist-watch with centre-second hand may be used ( preferably a stop-watch may be used )

**Reflection of sound—**Some practical application of reflection of sound in speaking tubes, stethoscope etc. should be stated.



**Echo**—Persistence of hearing and minimum distance of the obstacle for the formation of echo. Outdoor observations should be encouraged. (Reverberation should be excluded).

**Musical sound and noise**—Characteristics of a musical note should be stated in an elementary way in brief.

**Ultrasonic waves and their applications**—Deleted.

**2. Electric current**—An elementary idea of (i) electric charge, (ii) electric current and (iii) electric potential. Flow of charge from higher to lower potential—analogy with water flow should be drawn.

**E. M. F. of a cell**—Potential difference between the two terminals of a cell on open circuit should be mentioned.

**Ohm's law and resistance (no sum)** Statement and explanation of Ohm's law. Practical units of current, E.M.F. (Potential difference) and resistance. How resistance varies with length and area of cross-section to be stated. Effect of resistance in controlling current should be explained. The students should be encouraged to make illuminating arrangements with dry batteries, torch-light lamps and switches.

**Heating effect of current and Joule's law**—Statement and explanation of Joule's law and its application to electric heater and electric iron.

**Action of current on a magnet: Ampere's swimming rule. Action of magnet on current. Barlow's wheel. Application in case of motor**—Fleming's Left Hand Rule, Barlow's wheel and working model of motor may be demonstrated.

**Electromagnetic Induction**—Deleted.

**Principle of dynamo**—Deleted.

**3. Electromagnet**—Simple experiments with electromagnet should be demonstrated.



**Simple principle of a telephone receiver—Deleted.**

**Conduction of electricity through a gas at a low pressure—**Experiments with discharge tube should be discussed and may be shown, if possible. Simple mention of the phenomena as the pressure is gradually lowered.

**Elementary idea of Cathode rays, X-rays—**Cathode rays consist of electrons should be discussed. Production of X-rays to be discussed in an elementary way in brief. Important uses of X-rays.

## CHEMISTRY

**1. Molecules and atoms. Dalton's Atomic theory—**Statement and explanation with suitable examples.

**Periodicity of elements—Classification of elements in Periodic table—**elementary ideas)—General pattern of arrangement of elements in the Periodic table (Mendeleef). Periods and Groups. Mendeleef's periodic law. Position of common elements, hydrogen, inert gases, halogens. These topics are to be discussed just to give an elementary idea. (Defects of Mendeleef's Periodic table need not be discussed.)

**Electrovalency and co-valency—**Definition and explanations with suitable examples on the basis of electron distribution in the outermost shell. (Limitation of electrovalency and co-valency is not required.)

**2. Atomic weight, Molecular weight—Deleted.**

**Molar volume, gram-atomic weight, gram molecular weight—**Definitions and explanations with illustrations regarding the meanings of these terms. No problem to be set.

**3. Simple methods of preparation, simple properties and typical reaction of  $\text{HCl}$ ,  $\text{H}_2\text{SO}_4$  (contact process) and  $\text{HNO}_3$ —**Preparation of  $\text{H}_2\text{SO}_4$  excluded. Simple laboratory methods of preparation of  $\text{HCl}$  and  $\text{HNO}_3$  should be discussed in an elementary way. Physical properties of  $\text{HCl}$  and  $\text{HNO}_3$  regarding colour, odour, solubility and boiling point should be discussed. Chemical properties of  $\text{HCl}$ ,  $\text{H}_2\text{SO}_4$  and  $\text{HNO}_3$  regarding reactions with alkalis, metals (particularly  $\text{Ca}$ ,  $\text{Mg}$ ,  $\text{Fe}$ ,  $\text{Al}$ ,  $\text{Sn}$  and  $\text{Cu}$ ),  $\text{AgNO}_3$ ,  $\text{BaCl}_2$ . Oxidising action of  $\text{HNO}_3$  : (i) glowing charcoal and hot conc.  $\text{HNO}_3$  and (ii)  $\text{Cu}$ -turnings and cold dil.  $\text{HNO}_3$ . Demonstration of the distinction of the acids  $\text{HCl}$ ,  $\text{H}_2\text{SO}_4$  and  $\text{HNO}_3$  with the help of  $\text{AgNO}_3$ ,  $\text{BaCl}_2$  and  $\text{Cu}$ -turnings.

**4. Sources and uses of Phosphorus, Boron and Allotropy of Phosphorus—**These topics are deleted.

**Sources and uses of Carbon and Sulphur and Allotropy of Carbon—**Availability of Carbon and Sulphur in different places in free state or in compound forms or as a by-product. Uses in daily life. Mention of the universal presence of Carbon compound in various forms.

**5. Nature and uses of Caustic soda, washing soda, Common Salt, bleaching powder, quick and Slaked lime, Copper Sulphate, Ammonium Sulphate, Soap, Petrol, Kerosene, and methylated spirit—**Nature ( regarding (i) solid, liquid or gas, (ii) colour, (iii) odour, (iv) volatility, (v) solubility in water, (vi) acid, base or salt, (vii) organic or inorganic) to be discussed. (N.B. Sources; glass and Rectified spirit are deleted ).

**6. Source, elementary properties ( Physical and Chemical behaviour towards air, water, dilute acids and alkalis) and uses of Aluminium, magnesium, Zinc, Iron, Copper : Elementary**

ideas of Alloys—N.B. Lead, Mercury and Amalgams are deleted.

7. (a) Organic compounds, Their role in life processes. Nature and elementary classification of organic compounds—Linkage in Carbon compounds—its difference from inorganic compounds—N.B. Scope and variety are deleted;

(b) Sources and uses (preparation and properties excluded) of the following :  $\text{CH}_4$ ,  $\text{C}_2\text{H}_4$ ,  $\text{C}_2\text{H}_2$ , Chloroform, Ethyl alcohol, Vinegar, Glycerol, Glucose, Urea, Benzene, Phenol and Napthalene.

“Starting materials Sources” are to be discussed in place of the term—“Sources” as stated in the syllabus.

#### Demonstration Classes :

Demonstration classes should be held by the teachers for which separate class hours should be set apart. The following experiments should be done with the active participation of the students. Students should be asked to keep records of the observations, inferences etc. (regarding the experiments) in a class work book and to submit the same to the teachers regularly for assessment. This class work book should be maintained on the following experiments.



## EXPERIMENTS (TO BE PERFORMED IN DEMONSTRATION CLASSES)

### for CLASSES IX & X

#### PHYSICS

1. To determine the length of a straight thin rod or thick wire (wooden or metallic) in inches and in centimetres by using the two scales engraved on the two edges of an ordinary foot scales and to show that one inch = 2.55 cms. approximately.
2. To determine the volume of an irregular solid (insoluble in water and heavier than water) by measuring cylinder.
3. To verify the laws of reflection using a plane mirror and pins.
4. To measure approximate focal length of a convex lens by producing image of a distant object either on a white paper screen or on a white wall.

#### CHEMISTRY

1. Study of properties of dil. HCl and dil.  $\text{HNO}_3$  and dil.  $\text{H}_2\text{SO}_4$  or solutions of their salts by reacting with Cu-turnings,  $\text{BaCl}_2$  solution and  $\text{AgNO}_3$  solution.
  2. To study neutralisation of dilute acid and dilute alkali solutions by using any one of the indicators—litmus, methyl orange and phenolphthalein.
  3. To study reactions of (i) Fe with dil. HCl and dil.  $\text{H}_2\text{SO}_4$ , (ii) Al with conc. HCl and dil.  $\text{H}_2\text{SO}_4$  and (iii) Cu-turnings with  $\text{HNO}_3$  both dilute and concentrated.
  4. Preparation of  $\text{H}_2\text{S}$ —its smell and its reactions with (i) salt solution of Cu in presence of acid, (ii) salt-solutions of Fe and Zn in presence of alkali.
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## CHAPTER VI

### The Aims and Objectives of the Study of Geography at the Secondary Stage

#### CLASSES VI--X

#### THE AIMS

The aims of teaching Geography to the pupils of Secondary Schools are to help them to know their country and people in the first instance and gradually to widen their geographical knowledge of other lands and peoples so that they could eventually conceive the entire world as the home to mankind, and be able to develop national as well as inter-national understanding of peoples living under different natural environments.

#### THE OBJECTIVES

1. To develop the knowledge of geographical facts, principles, terms,
2.
  - (i) To develop the ability to recognise the effects of climate and topography on human activities.
  - (ii) To develop the understanding to relate geographic principles and knowledge to explain the Socio-economic activities and characteristics of people in India in particular and in other parts of the world in general.
  - (ii) To develop the ability to understand the necessity for interdependence of regions and peoples.
3.
  - (i) To develop the ability to relate geographic principles and knowledge to problems involving the development of man and material resources.
  - (ii) To develop the ability to use space and time concepts in solving problems ( in a very broad way).

4. (i) To develop the ability to read and interpret maps.  
 (ii) To develop the ability to prepare maps, sketches, charts, diagrams and models.  
 (iii) To develop the ability to observe the features of local environment.
5. (i) To develop a sense of awareness of the lives and activities of the people of India and some selected regions of the world.  
 (ii) To develop a sense of national intergration of India and interdependence of the different regions and peoples of the world.
6. To develop a scientific outlook in regard to the world and its existence.

Of all school subjects, 'Geography' is perhaps the best suited to bring about the international understanding as geography can show not only how peoples have lived and are living, but also what they have contributed to the common heritage of mankind as a result of the synthesis between environments and human activities. It is, therefore, desirable that the fundamentals of the geography of some typical regions (to be specified alter on) where men live and work, with somewhat greater details of the Geography of the home country should be incorporated in the Geography Syllabus for Classes VI-X in all Secondary Schools. A graded course of different aspects of physical environments for the different age groups should also be included to stimulate the desire of the pupils in learning Geography as a synthetic science.

## GEOGRAPHY

## Syllabus for CLASS VI ( From 1980 )

All the topics are to be dealt with in a very broad general way.

## 1. Physical basis :

The Sun and the major planets of the Solar family,

*No. of No. of  
pages periods*

1. Other basic facts relating to the Earth—a planet and its relations with the Sun—its parent body and with the Moon—a breakaway from it (Satellite) ...4 3  
Practical—students will draw diagrams of the solar family. ...1+1 *Desk work*
2. Man's landing on the surface of the moon and observation of the Earth's spherical shape from the Moon. ...2 2
3. The Sun's apparent daily movement in the sky from east to west—Rotation of the Earth causing day and night. ...1 1
4. Elements of weather and climate—air temperature, direction of wind and rainfall, Their observation and general discussion only. ...2 2+2
5. Position of a place on the surface of the earth as viewed on the globe. Simple description of the following with the help of globes, wall maps and atlases ; Parallels of latitude. The Equator—0° lat. Tropics of Cancer and Capricorn, Arctic and Antarctic circles. North and South Poles. Meridians *Desk work*



No. of No. of  
pages periods

of longitude. The Prime Meridian  $0^{\circ}$  long.  
(Greenwich)

Drawing of the sketch of the surroundings  
of the school. ...4 4+1

6. Distribution of land (continents) and water (oceans) on the earth's surface as shown on the globe. Land approximately 30% and Water 70%. *Desk work*

(Demonstration lesson followed by pupils' activities namely observation by pupils individually and tracing on paper.)

...1 1+1

7. Land forms—Mountains and hills, uplands (plateaus) and plains. (Description with adequate illustrations is required). *Desk work*

Following general features are to be specifically mentioned :

Mountains : Very high altitude above the surroundings : Rugged relief, peaks etc.  
Hill—moderate relief, altitude or elevation less than that of mountains.

- Plateau : extensive flat surface at a level higher than plains and with abrupt sides.

Plains : Extensive flat surface at a low level. ...2 3

8. Rivers, their valleys in the mountain and plain stages and the delta—example : the Ganga ...2 2

9. Local land use study (rural and urban) based on field work. In urban areas study should be



*No. of No. of  
pages periods*

on the following : Commercial and Residential and rural areas on Agricultural and settlements.

- (i) Teachers will arrange for field work in the neighbourhood to provide opportunities to the pupils to see things for themselves and learn well.
- (ii) This item is to be included in the Oral Examination and
- (iii) Work book maintained by the pupils is to be taken into consideration. ... 2 *Desk work*

**10. West Bengal : General** ...19+7 *Desk work*

- (i) West Bengal, a state of India—in the context of 21 other states ... $\frac{1}{2}$  1
- (ii) Situation in relation to the neighbouring states and countries—Nepal, Bhutan and Bangladesh (countries) Bihar, Orissa, Sikkim, Assam and Tripura (states). ...2 3
- (iii) Landforms—Mountains and hills, uplands and plains including the Ganga Delta, and } ...1 2
- (iv) Drainage—Important rivers and their direction of flow } ...1 2
- (v) Climate—Seasons of West Bengal, characteristics of the dry and wet monsoons. Characteristics of mountain climate ...2 2

	<i>No. of pages</i>	<i>No. of periods</i>
(vi) Soils and natural vegetation—Major soil types : alluvial and lateritics. Vegetation—in mountains, plains and delta	... 1	1
(vii) Population—Distribution and density in general and principal occupation of man in relation to their environment	2½	2
	<hr/> 10	<hr/> 11

## II. West Bengal : Regions

A descriptive approach is desirable with greater emphasis on human life and activities and less emphasis on statistics. The regions are to be studied with reference to their characteristics in terms of relief, drainage, climate, soil, vegetation and their cumulative effect on human activities (agriculture, life stock raising, fishing, mining and industries) and vice versa. Modifying natural environments by human activities (afforestation, land utilisation, irrigation) and all the above characteristics need not be discussed in all cases. Only the relevant aspects and major features are to be stated.

1. Darjeeling Himalaya Mountains	... 4	4
2. The Terai	... 2	2
3. Northern plains (north of the Ganga)	... 2	3
4. Rolling upland and plateau scarps in the West	... 4	4

		<i>No. of pages</i>	<i>No. of periods</i>
5. The Ruhr	...	3	4
6. The Ganga delta (The Sundarbans and the coastal sandy areas are to be discussed separately)	...	6	5
7. The Sundarbans	...	3	4
8. Sandy coastal plains	...	1	1

Map work—Tracing of outline maps of West Bengal and Indicating the following on the maps :

- (i) West Bengal as a State of India,
- (ii) Mountains and main rivers,
- (iii) Naming the regions,
- (iv) Important industrial areas and
- (v) Positions of important cities and towns.

		3	<i>Desk work</i>
Total	...	25	27+3
			<i>Desk work</i>

Grand Total—Pages 53 (18+10+25)

Periods—57+10 D.W.

Pages—53+30 (for maps, diagrams etc.)

## SYLLABUS ON GEOGRAPHY

(Introduced from 1982 onwards)

## CLASS—VII

**Topics suggested :**

A general treatment suitable for the students of this Class is required. To be illustrated with necessary examples. Detailed statistics to be avoided.

**PHYSICAL :**

	<i>Pages : Periods : Desk work</i> (Anushilan)		
1. Revolution of the earth causing changes of seasons	2	2	1
2. Types of mountains and plains.	2	2	
3. Stages in development of river valleys in the mountains and plains.	3	3	
4. Changes in air temperature depending on latitude and altitude.	2	2	
5. Causes and types of rainfall*	2	2	
6. Relationship between temperature, wind and rainfall in determining climate	2	2	1
	<hr/> 13	<hr/> 13	<hr/> 2

\* Mechanism of formation of Norwester and cyclones to be excluded.



## REGIONAL

*India as a part of Asia :*

1. Position in relation to southeast and southwest Asia in particular.	1	1	1
2. Concept of Indian subcontinent —Physical and cultural.	2	2	
3. Physical features :			2
(a) The Himalaya	2	2	
(b) Northeastern hills and Meghalaya plateau.	1	1	
(c) Indo-Ganga plains and Brahmaputra valley	2	2	
(d) Indian desert	$\frac{1}{2}$	1	
(e) Central Indian and Eastern high lands	1	1	
(f) Deccan Plateau	1	1	
(g) Coastal plains	2	2	
4. Major rivers and their characteristics			1
(a) Rivers of North India	$1\frac{1}{2}$	2	
(b) Rivers of South India	1	1	
5. Climate—(Major factors affecting climate of India to be illustrated with examples.)	3	3	1
		(Annual rainfall)	
6. Natural vegetation	1	1	1
7. (a) Types of irrigation.	1	1	
(b) Major Crops : Geographical conditions for growth and			

*Pages : Periods : Desk work*

	distribution of Rice, Wheat, Millets, Jute, Cotton, Tea, Sugarcane.	3	3	1
8.	(a) Minerals—Distribution and uses of Coal, Petroleum and Ores of Iron	3	3	
	(b) Sources of Power—Thermal, Hydel and Nuclear*	1	1	
9.	Major industries—location and importance of Iron and Steel, Cotton and Jute Textiles.	3	3	
10.	Transport : Types and impor- tances of			
	(a) Roads (National Highways, State Roads)			
	(b) Railways			
	(c) Waterways ( Inland and Coastal)			
	(d) Only importance of airways.	3	3	
11.	Distribution and density of population (high, medium and low)—Principal causes of variation.	2	2	1
12.	Cities (with population of ten lakhs or more) and Major Ports (their location and functional importance).	2	2	
		<hr/> 37	<hr/> 38	<hr/> 8

\* Location of plants and distribution not required.

*Pages : Periods : Desk work*

## ASIA :

An outline of physical features*	2	2
Type regions, (a) Malaysia	2	2
(b) Iran	1	1
	<hr/>	<hr/>
	5	5

## AFRICA :

An outline of physical features	2	2
Type regions : (a) The Sahara	2	2
(b) Congo basin	1	1
(c) Nile basin	2	2
	<hr/>	<hr/>
	7	7

Grand Total—	62	63	<hr/>	10
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\* Selection of type regions—It is desirable that in the secondary stage students should have a general idea about the world as a whole. But detailed study of the continents is not possible. Therefore, some type regions or typical areas of each of the continents are to be selected in such a way that there should not be any repetition, at the same time the sum total will enable the students in acquiring the desired results, i.e., a general idea of the whole world.

**Syllabus for Geography**

(Introduced from 1982 onwards)

**CLASS—VIII**

*Number of periods : No.*  
*for for pages*  
*Lessons : Desk work*

**1. Topics :****A. Physical Geography :**

- |  |            |     |                 |
|--|------------|-----|-----------------|
| 1. Latitude (angular measurement) and parallels of latitude  | 2 }<br>2 } | + 1 | 1 $\frac{1}{2}$ |
| 2. (a) Longitude (angular measurement) and meridians of longitude  |            |     | 1 $\frac{1}{2}$ |
| [Note—Angular measurement is to be introduced in this class.]  |            |     |                 |
| (b) Longitude and its relation with time   | 1          |     | $\frac{1}{2}$   |
| [Note—Determination of mid-day at a particular place—change of time with change of longitude. Simple statement only required. No mathematical calculation is needed. Further this should be properly illustrated.] |            |     |                 |
| 3. Interior of the Earth and Earth crust. A general outline of zones in the interior. Types of rocks found in the Earth crust. Only characteristics of the rock types.   | 2          |     | 2               |
| 4. Planetary winds—Trades, Westerlies and Polar winds—their latitudinal extents and seasonal north-south movements.  | 5          | + 1 | 5               |



Number of periods : No.  
 for for pages  
 Lessons : D, W.

[Note—This topic will help the students to understand well the different types of climate, which again will help them to understand the characteristics of many of the type regions.]

5. Some of the important types of climate.

(i) Warm temperate—Only Mediterranean type	2	2
(ii) Cool temperate—Only west coast oceanic or maritime type	2	2
(iii) Cold—Tundra type	1	1
Total—	17	15½

**B. Regional Geography :**

[Note—No detailed study is expected at this stage. The topics should be discussed in a broad general way with a view to bringing out their characteristic features in relation to the physical background and the human cultural response.

The following 'Type regions' have been selected on the basis of different aspects, namely physical features and climate, agriculture, industries etc. They cover a wide range. Repetition has been avoided as far as practicable. At the same time it is expected that all the 'Type regions' selected for Classes VII and VIII together will help the students much in getting a general idea of the world.]

*Number of periods : No.  
for for pages  
Lessons : D. W.*

## 6. Europe :

(i) Introduction—Location and Geographical importance—a general treatment	2		3
[Names of all countries and their capitals needed.]			
(ii) An outline of Physical features	2	+1	2
(iii) Type regions : Ruhr, London basin, Paris basin, Midland valley of Scotland and Mediterranean coast-lands	2 × 5		2 × 5
Po Valley	1		1
Polder land (reclaimed area of the Netherlands)	1		1

## 7. U. S. S. R.

(i) Introduction—Location and Geographical importance—a general treatment	2	+1	3
(ii) Type regions : Ukraine, Moscow region and Siberian plain (Taiga should be specially mentioned)	2 × 3		2 × 3

## 8. North America :

(i) Introduction—Location and Geographical importance—a general treatment	2		3
(ii) An outline of Physical features	2	+1	2
(iii) Type regions : Canadian shield, Lake region and Prairies of U.S.A.	2 × 3		2 × 3

Number of periods : No.  
for for pages  
Lessons : D. W.

(i)	Introduction—location and Geographical Importance—a general treatment.	2		3
(ii)	An outline of Physical features	2	+ 1	2
(iii)	Type region : Brazilian Highlands	1		1½
	Amazon basin	1		1½
	and Pampas	1		1

#### 10. Oceania :

(i)	Introduction—Location and Geographical Importance—a general treatment	1		2
(ii)	An outline of Physical features	2	+ 1	2
(iii)	Type regions : Murray-Darling basin	2		2

#### 11. Antarctica :

A general outline,	1		1
Total	47	+ 5	53
Grand Total	64	+ 7	68½

#### II. Use of illustrative materials e.g. maps, sketch maps, diagrams etc. in the book :

The above topics should be properly illustrated with suitable maps, sketch maps, diagrams, pictures etc. so as to help the students in having an easy grasp of the contents. The minimum requirement is indicated below :

1. Diagrams (at least 8 in number) to illustrate properly items no 1 to 4 of Physical Geography.
2. Sketch maps (at least 3 in number) to illustrate the areas under the influence of the three types of climate vide item No 5 of physical Geography.

3. Map of Europe to illustrate location and physical features.
4. Map of U. S. S. R do
5. Map of North America do
6. Map of South America do
7. Map of oceania do
8. Separate sketch maps (not necessarily on scale) to illustrate relevant aspects and major features of the 'type regions referred to in items no 6 (iii), 7 (ii), 8 (iii), 9 (iii) and 10 (iii).
9. Sketch map of Antarctica.

### III. General directions :

The topics selected above should be presented in simple language in a very general way so that the students may not find difficulty in understanding the subject matter. The method of presentation and the illustrative materials should be interesting und helpful in understanding the contents.

Total number of pages in the book— $68\frac{1}{2}$  (contents) + 30 (illustrations) + 10% allowance.

Size of the book—D. Demy 1/16.

Type for Printing—Pica type.



## HISTORY

### The aims and objectives of the study of history at the Secondary stage (Classes VI-X)

#### THE AIMS

A major aim of teaching history in secondary schools of West Bengal should be to rouse a spirit of enquiry and creative thinking and to develop an understanding of human societies and civilisations by a critical appreciation of the past. Another aim should be to help the students develop a concept of social evolution, the different social systems and stages of development of human civilisation so that they may have an idea of historical continuity ; the past producing the present, by stages of social change. (This aim conforms to the modern concept of history as a social science).

#### OBJECTIVES

The objectives of teaching history should be

- (i) To study the past to understand how the contemporary world is related to the past ;
- (ii) To generate awareness of the diversity of human factors behind social evolution in various stages without placing disproportionate emphasis upon region, community or section ;
- (iii) To disabuse the student's mind of the notions of racism, communalism, militant nationalism, regional or cultural chauvinism ;

- (iv) In the case of Indian history in particular, to equip the student with an unbiased and scientific outlook regarding the past, an idea, of the varied geographical, ethnic or regional factors woven into the texture of Indian history which forms an integral part of human history.
- (v) To carry home to the students that outmoded traditions were changed and new norms were established in course of human civilisation which is a common heritage of man, to which all people (including Indians) made contributions.

### **Specific Objectives for Classes IX & X**

1. To familiarise the student with the different categories and natures of historical sources.
2. To promote understanding of the common roots of human civilisation, the process and factors of change, the present state of civilisation, the interaction between various peoples, cultures, economies and nations.
3. To create awareness that there is no inherent superiority of any country or people, and that the complexities of the contemporary world were created by disparities within and between nations.
4. To help the student understand the inter-relation between political, social, economic, and religious and technological aspects of life mingled in a nation's history.
5. To help the student understand, in particular, the nature of historical changes in India vis-a-vis the phenomena of imperialism, colonialism, emergence of nationalism, national movement for independence and material conditions of life in the global perspective

### Specific Objectives for Classes VI to VIII

1. To inculcate an awareness of the importance of historical sources and relics of the past.
2. To introduce to the student, in chronological and non-detailed form the different stages of human past and the achievements and failures of man.
3. To explain historical developments in India in relation to and in the perspective of the history of mankind in its different stages.
4. To highlight the nature of social development in India and the socio-economic background of present life.

### SYLLABUS

**Class VI**—History of Ancient Civilisations.

(From primitive days to 6th century A: D. in synoptic form, with special reference to India).

**Class VII**—History of Mediaeval Civilisations.

(From 7th century to 17th century A. D. in synoptic form, with special reference to India).

**Class VIII**—History of Civilisations in Modern World.

In synoptic form, with special reference to India.

**Classes—IX & X**

History of India—18th century to 1947.

(in the context of related developments in other countries in the same period).

\*Syllabus for Class VI is given below in details. Detailed Syllabuses for other Classes will be submitted hereafter in due course.



## HISTORY SYLLABUS

## CLASS—VI

## HISTORY OF ANCIENT CIVILISATIONS

	<i>Pages</i>	<i>No. of Lessons</i>
<b>A.</b> (i) Why we should read history ; (to be acquainted with human civilisation, its development)	1	1
(ii) How we come to know of ancient people.	2	1
<b>B. Early man :</b>		
Use of fire as early as 300,000 B. C. (by 'Peking Man') : Food gathering man.		1
<b>Old stone Age :</b>		
Nature of tools and implements, their uses.		1
<b>New Stone Age : (By 8000 B. C.)</b>		
Evolution of tools and implements.		
Man—a food producer.		2
<b>The Neo-lithic revolution</b> consisted also of domestication animals : invention of pottery (wheel) ; weaving (clothings) ; dwelling—stone houses with defences ; early transport ; beginnings of community life in settlements ; beliefs and arts (as evident from cave-paintings etc.) ; use of formal language as a means of communication ; worship of the Goddess of productivity.	6	4 (for 'B' as a whole)



### C. Copper-Bronze Age :

Emergence of towns ; changes in production—specialisation (various types of skill of artisans and craftsmen) ; commerce (exchange of commodities); some changes in social life—classes ; inter-tribal conflicts ! emergence of an early form of state. Reasons of the growth of River Valley Civilisations.

4 3

### D. The Early Civilisations (3000 B. C.—1500 B.C.)—Mesopotamia, Egypt, Indus valley, China—in outlines :

#### (i) Mesopotamia :

- (a) Location and antiquity ; earlier development of civilisation than in other areas.
- (b) Fertility of the soil—crops.
- (c) Defence against floods.
- (d) Other occupations.
- (e) Achievements of Sumerians : imposing towers, mud-brick temples, fresco, stone-cutting, metallurgy, transport and trade, script.

5 4

#### (ii) Egypt :

- (a) Location and nature of the land :
- (b) The Pharaoh, the priest, script and scribes, tax collectors and 'soldiers' (workers) ;

- |                               |   |   |
|-------------------------------|---|---|
| (c) Trade ;                   |   |   |
| (d) The Pyramids (examples) ; |   |   |
| (e) Religious beliefs ;       |   |   |
| (f) Chief occupations         | 7 | 6 |

(iii) **The Indus Valley :**

- |  |   |   |
|--|---|---|
| (a) The discoveries (brief reference to locations and findings) ;        |   |   |
| (b) Town planning ; (c) Food and other articles of use ;                 |   |   |
| (d) Crafts ; (e) Trade ;   |   |   |
| (f) Worship ; (g) Light thrown by relics upon classification in society. | 7 | 5 |

(iv) **China :**

- |   |   |   |
|---|---|---|
| (a) Valley of Huang Ho and Yangste-Kiang ;  |   |   |
| (b) China in early times ;  |   |   |
| (c) Myths (particularly of flood).  | 2 | 1 |
| (v) Common features, in brief, of the riparian civilisations, with special reference to social and economic life. | 3 | 2 |

**E. The Iron Age Societies :**

- |   |   |   |
|---|---|---|
| a) Discovery and use of iron, its impact ;      |   |   |
| (b) Main features of social and economic life ; |   |   |
| (c) Growth of Kingship.                         | 2 | 2 |

**I. (i) Babylon :**

Farming and Commerce ; Temples and Priests ; Learning and Culture ; The Code of Hamurabi nature of of society revealed by the Code.

3

**(ii) Egypt as an Imperial power :**

Colonies ; The power of priests

2

**(iii) Iran ;**

Rise of Persia ; Zoroaster.

2

**(iv) The Jews :**

Hebrews in Egypt ; Hebrew exodus under Moses—flight from slavery.

12      2

(for 'J' as a whole)

**II. Greece (only in broad outlines) :**

An introductory note on the influence of Crete ; The Homeric Age. The city state, cultural interchange, colonisation.

Athens and Sparta—their social and political life. Athens Vs. Sparta.

Cultural greatness of Athens ; Literature, Arts, Religion—brief reference to a few eminent persons e.g. Pericles, Sophocles. Socrates, Herodotus.

Macedon : Alexander—his invasion of India. Fall of the Empire. Roman conquest of Greece.

10

9

**III. Rome :**

Origin of Rome. Conflict with Carthage. Early Roman Society ; Patricians and Plebeians ; Roman citizenship, Slavery and slave revolts (Spartacus).

**Julius Caesar ;** End of Roman Republic. New Empire. Eventual decline and fall. Rise of Christianity.

8            7

**IV. China :**

"Great Shang". Confucius - his teachings. Building the Great Wall. The Chin Empire.

3            2

**V. India :**

(a) The coming of the Aryans. (b) The Vedas. (c) Early Aryan Society religion, and political organisation (with reference to the Vedas). (d) The epics. (e) The rise of Jainism and Buddhism. (f) The Empires — a brief outline of developments from the Mauryas to the Kushans — to the decline of the Gupta Empire. (g) Ancient Bengal upto the decline of the Guptas (on the basis of proven historical materials viz inscriptions and literary evidencce).



(h) Foreign contacts (Particularly with Central Asia)—their impact upon society and trade : (i) Foreign Travellers Megasthenes and Fa Hien.—general picture of society as revealed in their accounts (in brief outlines only). (j) A brief summary of ancient Indian developments in arts and architecture, literature education Taxila and Nalanda), and Sciences (Astronomy, Mathematics, Chemistry, Medicine)

15 10

#### **F. From the Ancient to the Mediaeval Era :**

How the Ancient world opened the gates to the Mediaeval world.

- (a) Gradual changes in productive relationships.
- (b) Slave revolts.
- (c) Limitations to citizenship and human rights—toilers and producers were mere personal effects.
- (d) Growth and decline of Empires.
- (e) Rise of lesser potentates.
- (f) Emergence of feudal economic relations

3 2

\* The presentation all through should be made in brief outlines only, and mostly in story-telling style.

\* Volume of book = Approx—96 pages  
No. of Lessons required—approx. 75.

**G. Minimum requirement of maps for Text Books :**

1. Locations of early Civilisations (Nile valley, Asia Minor i.e. Mesopotamia, Huang Ho & Yangtsekiang Valley, Indus Valley)—all in **one full-page map**.
2. Mesopotamia—particularly highlighting the valley of the Euphrates and the Tigris. (Half-page).
3. Nile valley (The flow of the Nile and the surrounding land). (Half-page)
4. Indus Valley (The flow of the Indus and its main tributaries and the locations where relics have been unearthed). (Half-page)
5. The Aegean—(Greek Islands, Athens, Sparta and also Crete). (Half-page)
6. Alexander's Conquests (the conquered territories and routes of invasion). (Full-page)
7. The Roman Empire (Sicily, Carthage, Egypt, Asia Minor should feature prominently together with other conquered territories). (Full-page)
8. The Mourya Empire in India. (Half-page)

The following illustrations may also be included :

**Human figures**

- |                           |                        |
|---------------------------|------------------------|
| 1. Paleolithic tools      | 1. Any of the Pharaohs |
| 2. Neolithic tools        | 2. Pericles            |
| 3. Scripts—Cuneiform      | 3. Socrates            |
| 4. Hieroglyphic (Scripts) | 4. Julius Caesar       |
| 5. Brahmi (Scripts)       | 5. Herodotus           |
| 6. Pyramid                | 6. Confucius           |
| 7. Cave painting          | 7. Alexander           |

- |  |                   |
|--|-------------------|
| 8. Mohenjodaro relics  | 8. Mahavir        |
| 9. Chinese wall  | 9. Buddha         |
| 10. Gods & Goddesses   | 10. Asoka         |
| <div style="display: flex; align-items: center;"> <div style="font-size: 3em; margin-right: 10px;">{</div> <div>             Egyptian<br/>             Indus Valley<br/>             Greek           </div> </div> |                   |
| 11. Painted potteries  | 11. Samudra Gupta |
| 12. Colosseum  |                   |
| 13. Roman slave  |                   |
| 14. Ajanta paintings   |                   |
| 15. Amphitheatre.  |                   |

#### H. References for authors of Text Books :

- |  |                                      |
|--|--------------------------------------|
| 1. The story of Mankind                | ... Van Loon                         |
| 2. What happened in History            | ... Gordon Childe                    |
| 3. Our Oriental Heritage               | ... Will Durant                      |
| 4. Outline of History                  | ... H. G. Wells                      |
| 5. The Wonder that was India           | ... Basham                           |
| 6. Penguin History of India, Vol. I    | ... Ramila Thappar                   |
| 7. Bangalir Itihash (abridged Edn.)    | ... Dr. N. R. Roy                    |
| 8. Milestones of History, Vols. I & II | ... Edited—S. G. F.<br>Brandon, etc. |

# HISTORY SYLLABUS FOR CLASS VII

## History Of Mediaeval Civilisations

Pages : Lesson

1. **Meaning of the term "Mediaeval" :** 3      3
  - (a) From overthrow of the last Roman Emperor in 476 A. D. to the rise of of new society, new State, new learning, new economic patterns.
  - (b) India—from the end of the Gupta Era (although Feudal relations had started from the 5th century).
  - (c) The time period in both cases—roughly 5th century to 15th century A.D.
  - (d) Periodisation is arbitrary because of gradual transition, in some respect the old merging into the middle ages.
  - (e) Middle ages—not the same period everywhere.
  - (f) No single pattern. Unequal and varied developments.
2. **The Middle Ages in the West :** 5      3
  - (a) Advent, pressure of the Huns upon Germanic Tribes—their migration into the Western part of the Roman Empire—fall of the Empire (476 A.D.) Survival of Roman Law and Roman idea of imperial unity.



(b) A short reference to Alaric, Atilla, Gaeseric

(c) Social, political and religious life of the migrants, (a brief account only of their settlements in the imperial (a) territories—mix-up with Roman population. Christian influence upon the settlers.

3. The myth of "Dark Age" in Europe :

3

3

4th to 7th Century not 'dark'; learning was kept alive in monasteries—ecclesiastical concept of right and wrong functioned as a civilising influence :

4. The Byzantine Civilisation :

7

5

(a) Constantine founds Constantinople and makes Christianity the official religion of Byzantium.

(b) Justinian's efforts to establish unified empire (without details about wars). Justinian's Law Code, its importance; patronage of architecture and painting.

(c) Importance of Byzantium as a centre of trade and commerce, preserver of Culture (Literature, Philosophy, Science).

**5. Islam and its impact :**

7 5

- (a) The Arabs—land and people. The prophet and his teachings ; Factors which facilitated the spread of Islam : The Caliphs, the Arab Empire : Cordova ; How Europe reacted to the achievements of Islam : Arab contributions to culture and sciences, scholarship, Some scholars.

**6. Western Europe in Mediaeval Period (800-1200 A.D. approx.) :**

10 8

- (a) Charlemagne—revival of the Holy Roman Empire ( 800 A. D.). Importance of Coronation—relation between State and Church—Court and its patronage of art and literature.
- (b) Monasteries—monks and nuns—life centring round monasteries (Benedictive vows) the role of monasteries in the preservation and dissemination of learning—Cluny (Freeing the Church from corruption, secularisation).
- (c) Investiture issue (Reference only).
- (d) 11th and 12th centuries : from monastic and cathedral schools Universities—some famous scholars, students and teachers relationship. The growth of studies in Law, Medicine, Theology, as well as logic, liberal Arts, literature.

## 7. Feudalism in Mediaeval Europe :

16

10

(a) Feudalism : Land - the bond between man and man : The Feudal hierarchy; private assumption of public authority. The role of the Feudal Castle and mailed horsemen in saving Europe ; Feudalism—a way of life ; Institution of Chivalry—Troubadours.

(b) Manorial System : Manorialism—economic aspects of Feudalism ; Manor—the local unit of Feudal Govt. Manorial Court. Economic condition : Cultivation by labour of village community ; Peasants heavy toil and heavy rent—conditions of peasant's life. Heavy dues to Lord and Church in cash or kind. Manorial life in castles—Three distinct classes—clergy, nobility and the rest—nobility and peasants at opposite poles. Serf—a chattel of the lord—obligatory service, hereditary serfdom ; Means of escape—joining a holy order, running away to town for shelter, getting employed in business and industry, Revolt.

## 8. The Crusades : (1st, 3rd, 4th)

3

6

Motives—Impact upon Society and culture—new towns and trade-centres (Italy in particular), cottage industries



separated from agriculture (11th & 12th centuries).

9. Growth of Towns—Role of the Crusades—Guilds in towns—their activities—a short account of life in towns. Town autonomy by royal charter ; origin of the term “Bourgeois.”

**10. The Far East in the Middle Ages :**

10

8

- (i) China in Mediaeval Period (from early 7th century to 14th century).
- (a) The Tang period (618-907 A.D.) Re-unification of China and recasting the laws : Education, learning, literature (poetry) : Tea, printing, arts. Promotion of trade, commerce and agriculture. Buddhism in China. Chinese civilisation spread to Japan, Korea, Annam. China—a model for emulation. Hiuen Tsang's Visit to India and his return—impact.
- (b) The Sung period (960—1280)—Important experiments—State control of commerce, State loan to farmers—property tax,—Education and culture.
- (c) The Yuan period (1280—1368) : The Mongols : Kublai Khan (Tibetan Buddhism) and the account of Marco Polo.



(ii) **Japan in Mediaeval period :** 6 5

- (a) Society and Feudal economy in early mediaeval times. Supremacy of Mikado : Close links with China. Resistance of "Great Families." Mikado combined the office of Shinto High Priest and absolute sovereign. Yet the growing power of hereditary clan-families and enrichment of Buddhist Orders weakened the central authority. The Shogunate. The (Samurai) Japanese Chivalry (Bushido).

11. **India in the Middle Ages :** 16 12

- (a) After the Guptas (5th-7th century). Hun incursions from 458 (occupation of Persia, Kabul and North Western India) : (historical importance of the Huns). Breakup of the Gupta Empire ; Age of Harshavardhan ; shrinking of the idea of imperial unity to only Uttarapath (north) : Hiuen Tsang's travels—his account ; Nalanda—main features of the University.
- (b) Post-Harshavardhan Period (8th to 12th century) After Harshavardhan—rise of smaller states : The Rajputs : The Feudal Clannish principalities of Rajputana : Pala, Pratihara,

Rastrakuta; contest (reference only)—  
inability to establish a united empire ;  
smaller kingdoms and vassals.

(c) Bengal : Sasanka, Life and Society  
under the Palas and Senas—Religion  
and learning (Vikramsila and  
Uddandapur).

(d) South India—The Chalukyas of  
Badami and Pallavas of Kanchi—  
their contributions to Art and  
Architecture—Maritime activities of  
the Cholas.

## 12. India's foreign contacts :

7

4

By land—Mahayāna Buddhism in Central  
Asia, thence to China (Khotan ruins,  
Hiuen Tsang's evidence) : Tibet—(Atisa  
Dipankar).

By Sea—Settlements and cultural  
influence in South East Asia  
Subarnabhumi—Yashodharpur and  
Angkorvat, Angkar thom—Malay, Java—  
Barobudur.

## 13. The Sultans of Delhi (1206 to 1526 A. D.)

6

3

Coming of Turko-Afghans to India (only  
a brief reference to the motive and  
manner of their coming).

Main features of political, social and  
economic life ; Mutual influence of

Hinduism and Islam ; liberal developments in Arts and culture, translation of classics, Bhakti Cult (the mediaeval Saints) —Sri Chaitanya, Nanak and Kabir.

Bengal—Social, cultural and economic conditions in Ilias Shah and Hussain Shah's periods.

Short account of the general administrative system.

#### 14. Towards the end of the Mediaeval era (14th & 15th centuries).

Fall of constantinople : its impact on the Renaissance which had already started in the West.

\*Features of the Renaissance era—Spirit of enquiry and reasoning, widening of frontiers of knowledge, scientific discoveries based on "obsured facts", geographical discoveries—its outcome.

\*National States—France, England, Portugal, Spain, Struggle for National Freedom (Dutch).

\*Expansion of Europe.

\*Old Order VS. New Order—The English revolt.

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\* Topics with asterisks should only be used as reference, as a conclusion to the old era and introduction of a new era.



While dealing with events and developments in one region, the text-book writer and the teacher should refer to contemporary and particularly similar events in other regions. A comprehensive outlook should be aimed at. The presentation should be simple, lucid in language (preferably colloquial) and attractive in style.

The story "form" should be incorporated as much as possible. Books should be well illustrated and provided with detailed exercises.

A book should be limited to 110 pages of content matter and 34 pages of illustrations and exercises : Total=144 pages  
The volume should be covered in less than 80 lesson units.

Type—Pica type

Size—Double Demy (1/16).

The following maps and illustrations are to be included in the Text book for Class VII.

- Maps—1. Routes of Germanic migrations and areas of settlement.
2. Division of the Roman Empire—highlighting Rome and Constantinople.
3. Charlemagne's Empire



4. Hiuen Tsang's route to India and back.
5. Kublai Khan's Empire and Marcopolo's Route.
6. Empire of the Delhi Sultans.
7. India's foreign settlements.
8. Spread of Islam to north Africa, Spain-etc.
9. Mediaeval towns.

**Other illustrations :**

Harshavardhan, Nalanda, Justinian, Charlemagne, A monk, A knight, A monastery, A castle, South Indian temples, Barobuder, Alauddin, Md. Tughluk, Kabir, Nanak, Chaitanya, Diagram of a manor house, Hiuen Tsang, Kublain Khan etc.

## SYLLABUS ON HISTORY FOR CLASS VIII

1. **Modern Age :***No. of pages*

Changing Economy of Europe : Decay of Feudalism—some improvements in the technique of agricultural production—new crops introduced—some improvements in the sphere of industrial production—impact.

2

2. **Renaissance in Europe :—** (To be presented in a very simple general way).

(a) **Its character :** An evolutionary process since the 12th Century, stimulated by the fall of Constantinople in 1453 ; revival of the learning of the ancient Greeks and Romans, and respect for scientific truth and accuracy ; recovery of the old Greek attitude towards a life not interested in otherworldliness or priestly meditation, nor inclined to believe, on traditional authority, that what happened in nature was an act of God ; open-minded critical enquiry into life despite all attempts of the Catholic Church to maintain old beliefs ; a spirit of enquiry guided by reason and broadened by personal experiment and observation since the 13th century.

(b) Early lead in Italy, where merchant princes vied with one another in

their support and encouragement of art and literature and science, was taken by Florence, from where it spread to Milan, Rome and other cities and then spilled over the Alps to Europe in Germany, Flanders, the Netherlands, Portugal, Spain, France and England.

3

(i) **'Intellectual' Renaissance or humanism :**

With reference to the development of literature in the refined vernacular languages : Dante, Petrarch, Machiavelli, Boccaccio (Italy) ; Sir Francis Bacon, Chaucer, Spenser and Shakespeare (England); Erasmus (the Netherlands) ; Cervantes (Spain) ; Rabelais (France).

(No biographical details are wanted ; only their significant contributions towards promoting open-minded, critical enquiry into life and nature, guided by reason and human interest in everything around them.)

(ii) **Renaissance in art** (painting, sculpture and architecture)  
Specially Leonardo da Vinci, Raphael, Michelangelo.

- (iii) **Renaissance in Science** : Roger Bacon, Sir Francis Bacon, Leonardo da Vinci, Copernicus. Galileo, Gatenberg (printing press).

6

### 3. Europeans widen their world :

- (a) The changing economy and the spirit of Renaissance in Italy led to the discovery of new world by the intrepid navigators of Portugal and Spain with the help of the improved compass and the astrolabe : Prince Henry the Navigator, Bartholomew Dias, Albuquerque, Vasco da Gama, Cabral (all for Portugal); Columbus, Balboa, Amerigo Vespucci, Magellan (all for Spain).

**Results :** (i) Widening knowledge of world geography and the ancient civilizations of the New Continent ;

- (ii) Circumnavigation of the world ;

- (iii) The flag followed trade ; colonies and colonial exploitation ; the Spanish conquistadores.

### 3. (a) Formation and rise of nations.

4



#### 4. Reformation in Europe :

- (a) Protest against abuses in the Catholic Church—the teachings and actions of John Wycliffe of Oxford, John Huss of Prague, Martin Luther of Witterberg. (In narrative form).
- (b) Results : Lutheran or Protestant Church in some states in Germany ; spread of Protestantism in Northern Europe, England and Scotland.
- (c) Reform within the Catholic Church :
  - (i) For internal reform and consolidation—to improve the morals of the clergy ; to stamp out heresy by coercive methods and trial in the Inquisition court ; the Jesuit Society ; the Council of Trent, 1545-1563 (reference only, ignoring dogmas or beliefs of the Catholic Church).
  - (ii) The Religious Wars in the Holy Roman Empire between the League of Protestant states and Emperor Charles V, 1546-1555 (without details) ; the treaty of Augsburg, 1555 (only reference).
- (d) Attempt on the part of Philip II of Spain to stamp out Protestant heresy in the Netherlands—his misrule and

heavy taxes led to the Dutch Revolt under William of Orange—its result—the Dutch Republic's Independence recognised in 1648 (later kingdom); Southern Netherlands, later known as the Austrian Netherlands, was called the kingdom of Belgium, a Catholic State.

- (e) Attempt of Philip to bring Protestant England and its Church under his control (in brief)—the Spanish Armada—Philip's failure.

11

## 5 The English Revolution in the 17th century :

Central issues in the conflict between King and Parliament—The Civil War (brief story)—Cromwell and the Commonwealth—The Restoration—The Bloodless or Glorious Revolution of 1688—the Bill of Rights, 1689 and other results.

4

## 6 India.

### (A) The Mughal Empire :

- (1) Foundation, growth and expansion from 1526-1707 (in brief narrative form).
- (2) Main features of Mughal rule—social and economic life, some foreign travellers.
- (3) Decline of the Empire 1707-1757, a brief account.

7

(B) (1) Coming of the European traders  
—growth of rivalries (in brief  
story form).

(2) Rise and expansion of Maratha  
power (battles may be touched  
only without details—in story  
form.)

(3) Rise of the Sikhs, their organisa-  
tion (battles may be touched only  
without details—in story form.)

6

7. **Foundation and growth of the British power  
in India till 1857 in short narrative form.**

(1) Early phase till 1818.

(2) Later phase till 1857.

(3) The 'Mutiny', causes and nature,  
reasons for failure.

(4) Results of British Rule : political  
and economic discontent.

10

8. **World in the 18th century : Age of Reason (no  
reference to "Enlightened Despotism")**

The three Revolutions :

(a) American war of Independence : causes,  
reasons for American success, results.

(b) Industrial Revolution in England ; meaning.  
The agricultural revolution, Inventions—  
Results.

- (c) French Revolution : No. of Pages
- (i) Pre-revolutionary thought ; eminent leaders —Voltaire, Montesquieu, causes Rousseau, causes and progress (in brief).
  - (ii) Napoleon as 'soldier of the Revolution' and as Emperor. The Revolt of Europe.
  - (iii) Permanent results of the French Revolution.

13

**9. Europe since 1815 :**

- (a) Forces of nationalism and democracy (liberalism) versus forces of reaction as seen in the principle of legitimacy and workings of the Quadruple Alliance and the Metternich system (in brief).
- (b) Nationalism and democracy in Europe (Italy and Germany upto 1871 in brief).
- (c) American Civil War ; Central issues ; Abraham Lincoln's role.
- (d) Industrialization of Europe (machine civilization) ; Its results. The working class—Marx and Engels.

13

**10. (A) Developments in China till 1911 : (Both China and Japan should be treated in a simple general way without any details of wars and treaties)**

- (i) Opium War and the treaty of Nanking, 1842, and the British Commercial Treaty ; the Tientsin Treaties, Treaty Ports. Foreign Settlements and extra-territorial rights ; rivalry among powers for cutting up the Chinese Melon. Hay's Open Door 1901.

3



- (ii) Chinese reaction : The Taiping Rebellion, 1853 ; the Hundred days Reform 1898 ; the Boxer Rebellion ; Empress Dowager's reaction ; fresh attempt at internal reform 1902-1908 ; overthrow of the last Manchu Emperor in 1911 ; China a republic, 1912 ; Sun Yat-Sen and Yuan Shi-Kai. (all in brief narrative form)

4

- (b) Rise of Japan as a great power till 1914 : Meiji restoration 1867 ; the position of the Crown ; Westernization of Japan, politically, economically, socially and militarily ; Japanese *Imperialism* begins with the Sino-Japanese War, 1894-95 ; the Anglo-Japanese Alliance of 1902 (the sheet-anchor of Japanese power in the Pacific) ; Russo-Japanese War, 1904-1905 ; annexation of Korea, 1910 ; World War I and Japan's 21 demands on feeble China. (all in brief narrative form)

4

# 11. India under the Crown, 1853-1914 :

New Administration—Imperial expansion—social Re-form movements in the 19th century—growth of the nationalist sentiment—the Indian National Congress. Extremist movement from 1905-1914

7

# 12. The First World War :

Underlying causes, its magnitude : Results (with special reference to India 1914-1918)—Reasons for India's aiding the war effort, Economic strains and popular discontent ; work of the revolutionaries in India and abroad. Home Rule

- movement, Lucknow Pact, Rowlatt Act, Jalian-wallahbagh, Proposal for Montford Reforms, Muslim discontent, Stage set for Non-Co-Operation Emergence of Gandhiji as a National Leader. 8
13. **The Bolshevik Revolution, Causes—its Impact on Europe and the world.** 5
14. **Europe 1919—1939 :**  
Paris Peace Conference and Reconstruction of Europe—Growth of fascism and Nazism. The League of Nations, its achievements and failure (in brief) 7
15. **The Second World War :**  
its origins and results (brief outline) 3
16. **India 1919—1947 :**  
Different phases of the Freedom Movement : Non-cooperation movement, Peasants' and workers' participation ; Civil Disobedience Movement, 'Quit India', 'Azad Hind' and general upsurge, transfer of power and Independence. 10
17. (a) **Revolution in China, 1911—1949 :**  
The republic divided between Yuan shi-kai and Sun Yat-Sen. Yuan dies in 1916 ; China in the grip of Tu Chuns (war lords) ; Sun Yat-Sen's Kuomintang (Nationalist Party)—his Three People's Principles—May Fourth Movement his death in 1925 ; K.M.T and Communist

Party of China relations from 1921—1924 ;  
 Chiang's repressive policy - the 6000 mile Long  
 March of the Communists in north-western  
 China ; the Sian-Fu incident of 1936 to bring  
 Chiang and Mao together in China's united  
 endeavour to oppose Japanese invasion of  
 Chinese territory since 1931—the invasion  
 merges in World War II in 1941 ; the Civil  
 War between the Kuomintang and the Commu-  
 nists begins after the end of World War II in  
 1945 ; Chiang and his Kuomintang forces  
 driven out from China to Formosa (Taiwan —  
 the mainland of China united under Mao's  
 control in October 1949. (in brief story form).

5

(b) **Revolution in "South-East Asia" after 1945 :**

Indo-China, Burma, Malayasia, Indonesia.

3

(c) Spread of nationalism and unrest in subject  
 countries during World War II—The Atlantic  
 Charter—Foundation of the U.N.O., its objec-  
 tive—Triumph of the Socialist forces—growth  
 of socialist movement and the anti-colonial  
 movement.

2

Text matter 140 pages

Illustrations etc. 15 pages

Exercises 10 pages

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Total 165 pages



## CLASSES IX-X

### Part—A

#### HISTORY OF INDIA UPTO THE MIDDLE OF THE 19th CENTURY

- I. Geography : Its influence on the country, its people, and History.  
Elements of India's Population—Evolution of composite culture—Fundamental unity. ( 5 pages )
- II. Source material : Ancienr, medieval and modern period. ( 4 pages )
- III. Antiquity of India and her civilisation : Indus Valley Civilisation. Coming of the Aryans, Civilisation and religion as revealed in the Vedas and the Upanishads. ( 8+2 pages )
- IV. Growth of Jainism Buddhism. ( 5 pages )
- V. (i) Foregin Invasions ; Persian, Greek (Macedonian and Bactrian) Scythian (Saka-Parthians, Kusanas and Huns) . ( 4 pages )  
(ii) General nature of resistance. Impact of foreign inroads on the social and cultural life. Redisposition of Indian Society : Rise of the Rajputs. ( 6 pages )
- VI. Bid towards Imperial Unity : its different phases :  
Under Magadha : (i) From Bimbisara to Asoka. ( 5 pages )  
(ii) Chandragupta I to Skandagupta. ( 5 pages )  
Under Kanauj : From Pusyabhuti Harsha to Pratihara Mahendrapala, ( 2 pages )  
Under Gauda : From Sasanka to Devapala ( 5 pages )



- VII. Society and Culture (in North and South India )  
from the 4th Century B. C. to the 14th Century A.D.  
( 10 pages )
- VIII. Indian Culture and Civilization beyond India.  
( 5 pages )
- IX. (a) Rise, growth and decline of Turco-Afghan Power.  
( 10 pages )  
(b) Rise, growth and decline of Mughal Power in  
India. ( 10 pages )
- X. Impact of Mahomedan rule on social and economic  
life : on art, architecture, literature, language and  
religion. Religious reformers ( 10 pages )
- XI. (a) The Marathas : From Sivaji to Baji Rao-II  
(in outline). ( 10 pages )  
(b) The Sikhs : from Nanaka's successors to Ranjit  
Singh (in outline). ( 8 pages )
- XII. Advent of the European : Their rivalries : Emergence  
of the English—From Trade to Political domination.  
( 6 pages )
- XIII. Expansion of British Power from Clive to Dalhousie  
(References to wars with Sikhs in outline). ( 8 pages )
- XIV. (i) Reforms under Warren Hastings, Cornwallis,  
Bentinck, Ripon and Dalhousie ( 5 pages )  
(ii) Social, cultural and religious reforms under Indian  
initiative. ( 12 pages )  
Rammohan Roy, Derozio and Young Bengal.  
Brahma Samaj leaders, Iswar Chandra  
Vidyasagar, Syed Ahmed Khan, Prarthana Samaj,  
Dayananda, Ramkrishna Paramhansa.
- XV. Reaction against British rule. Background of the  
Mutiny and Revolt of 1857—Cause, progress, nature.  
Its outcome, End of the rule of the East India Com-  
pany, India on the threshold of a new era. (10 pages)

The book on Part A should consist of 185 pages with 30  
pages of illustrations,

**Part — B****History of Freedom Movement,**

- I. (a) Impact of western contact. Remaking of India : introduction of western education intellectual re-awakening, growth of Indian Nationalism. Impact of the idea preached by Bankim Chandra and Vivekananda : economic exploitation of the people, educated unemployment, sense of unity fostered by easy means of communication, role of the Press, rediscovery of India, Urge towards responsible government. ( 10 pages )
- (b) Political association from the Landholders' society to the Home Rule League. ( 3 pages )
- (c) Indigo Agitation, protest against Arms Act and the Vernacular Press Act, Ilbert Bill controversy, leadership of Surendranath Banerjee. All India National Conference, 1883. ( 7 pages )
- II. Foundation of the Indian National Congress, 1895. Its leaders and activities upto 1905. Changing role, Congress not destined to be Her Majesty's opposition : Growing discontent against the policy of 'Prayer and petition.' ( 6 pages )
- III. Partition of Bengal ( 1905 ) a Challenge to Indian Nationalism. Swadeshi and Boycott Movement. Muslim Participation. National Education Movement. ( 8 pages )
- IV. (a) Growth of militant nationalism. Bal Gangadhar Tilak, Aurobindo Ghosh, Bipin Chandra Pal, Lala Lajpat Rai. ( 6 pages )
- (b) Revolutionary struggle in Bengal, Maharashtra and the Punjab. ( 9 pages )

- V. New leader : M K. Gandhi. Aftermath of World War I. Disillusionment against the British and discontent against their measures of repression, Jalianwalabagh Massacre. Gandhiji's concept of Satyagraha—non-violent Non-co-operation and Khilafat movements—a short history. ( Congress divided : the Home Rule Movement ; the Swarajya Party : revival of Revolutionary extremism ).  
(15 pages )
- VI. New phase in the Freedom Movement : The Lahore Congress ; demand for complete independence under Jawaharlal Nehru's leadership, historical importance of the 26th January, British Policy of "kicks and kisses". Round Table Conferences. Civil Disobedience Movements, Role of Jinnah and Muslim League, Abdul Goffar Khan, Abul Kalam Azad, Congress participation in Government—disillusionment. ( 20 pages )
- VII. Impact of the Second World War. 'Quit India' and August Upsurge. Netaji and the I.N.A. Exploits of the Azad Hind Fauj. The Naval Revolt. Failure of British efforts at conciliation : Crips Mission, Cabient Mission, Interim Government. Transfer of Power—Indian Independence Act, 1947—creation of two Dominions—India and Pakistan. India as Republic ( 1950 ).  
( 16 pages )

Part—C ( 25 pages )

- A. Broad features of Indian Constitution. ( 22 pages )
- i. Independent India : Constituent Assembly : Making of the Constitution. Preamble, the National Flag, the National Anthem. Broad features of the Constitution



( The Indian Union and the Constituent States and Union Territories. Parliament, the Union Executive), the Judiciary, The State Executive, Legislature and Judiciary

II. The Electorate. Directive Principles of State Policy.

III Fundamental Rights.

**B. Citizenship—Rights of Indian Constitution. ( 3 pages )**

The book on Parts B and C will consist of 140 pages with 15 pages of illustrations on Part B.

(There shall be one book for History of India and Her people for Classes IX & X. But in view of the fact that it may not be possible to publish a complete book for Classes IX & X, the publishers may be permitted, as a special case, to bring the book out in two volumes. Part A of the syllabus may be incorporated in the 1st volume which may be taught in Class IX. The book should be printed in Small pica and Size Double Demy ( 1'16 ).



## CHAPTER VII

### WORK EDUCATION, PHYSICAL EDUCATION AND SOCIAL SERVICE INCLUDING SCHOOL PERFORMANCE

#### (Revised Syllabus in Work Education)

It has long been realised by our educationists that the system of education prevailing in our country suffers from many defects. The education given in our schools is isolated from life ; the curriculum as formulated and presented through the traditional methods of teaching does not give students an insight into the work-a-day world in which they are living. The methods of teaching generally practised fail to develop in students their independence of thought or initiative in action. The increase in the size of classes has considerably reduced personal contact between teachers and pupils. The dead weight of examination tended to curb teachers' initiative, to stereotype the curriculum, to promote mechanical and lifeless methods of teaching, to discourage all spirit of experimentation and to place the stress on wrong or unimportant things in education.

The question of reorganisation of Secondary Education has therefore been attracting the attention of the Government of India since the conclusion of the Second World War. The Central Board of Secondary Education published a report on 'Post-War Educational Development in India' which is commonly known as the Sargent Report. The Sargent Report, following the Wardha Scheme of Basic Education, visualised a system of universal, compulsory and free education for all boys

and girls between 6 and 14 years and craft was given an important place in the total scheme of School Education.

With the attainment of Independence in 1947 the entire situation changed and the problem of Secondary education, already acute then became more complex by the partition of Bengal which halved the resources of the State but burdened it with serious social and economic problems. The problem of Secondary Education thus called for urgent remedy, and the State Government, by a Resolution dated the 20th April, 1948, appointed a broadbased school Education Committee. The Committee recommended that 'the objective of Secondary Education should be a selfcontained system of life-regarding Education suited to the various aptitudes, activities and needs of adolescent pupils and should not be unduly restricted to the requirements of University Education'.

The Government of India in 1949 appointed the University Education Commission under the Chairmanship of Dr Radhakrishnan. The Radhakrishnan Commission in their report (1949) urged immediate reform of Secondary Education which they termed as the 'weakest-link' in the education chain in India.

In 1952-53, the Government of India appointed a Secondary Commission commonly known as Mudaliar Commission'. As defined by the Commission, the role of the Secondary Education in Independent India is nothing less than 'equipping its students adequately with civic as well as vocational efficiency and the quality of character that goes with it—so that they may be able to play their part worthily and competently in the improvement of national life'.

The Mudaliar Commission laid considerable stress on certain 'Common Core' subjects including crafts to provide the

Foundation of citizenship training of adolescent boys and girls. The Commission strongly recommended that there should be provision for crafts and productive work in schools. Schools should devote special attention to crafts and productive work and thus redress the imbalance between theoretical and practical sides which had been upset for many, many years.

The Government of West Bengal appointed a separate Secondary Education Commission under the Chairmanship of the late Dr. B. B. Dey to review the various aspects of Secondary Education, particularly in the light of the recommendations of the Mudaliar Commission. The recommendations of the Dey Commission were accepted by the State Govt. The revised structure in Secondary Education was introduced in West Bengal in 1957, broadly, on the recommendations of the Dey Commission. Craft was included in the curriculum as an important core subject. But unfortunately, the craft as core subject could not be taken up in earnest in many of the erstwhile XI-Class Higher Secondary Schools.

The Government of India, by a Resolution dated the 14th July, 1964, appointed the Education Commission with Prof. D. S. Kothari as its Chairman to advise the Government on the national pattern of Education and on general principles and policies for the development of education at all stages and in all aspects. The Commission recommends a flexible educational structure.

The Commission also visualises that the first ten years of schooling, covering a primary stage of seven or eight years and a lower Secondary Stage of three or two years, should provide a course of general education without any specialisation with provision for Work Experience and Social service as integral parts of general education, at more or less all levels of



education. The Commission visualises work-experience as a programme to relate education to life and productivity and so recommends that Work-Experience should be introduced as an integral and compulsory part of all education—general and vocational. Work Experience has been defined as participation in productive work in school at home in a workshop, on a farm, in a factory or in any other productive situation. In the opinion of the Commission, all good and purposeful education should consist of at least four basic elements :

- ‘literacy’ or a study of languages, the humanities and Social Sciences ;
- ‘numeracy’ or a study of Mathematics and Natural Sciences
- ‘technology’ or Work Experience
- ‘Social Service’.

The Commission further recommends that in the lower Classes, i.e. upto Class VIII. work Experience may begin as simple hand work, the objective being to train children to make use of their hands and thereby help their intellectual and emotional growth.

In senior Classes (Classes IX & X) it may take the form of learning, through workshop training a craft which develops technical thinking and creative capacities in pupils. Even here however, some Work Experience can be provided in real life situations, such as work on farms at the time of harvesting and sowing or in a family production unit, and opportunities for this kind of activity should be utilized to the maximum extent possible.

At the Higher Secondary stage (Classes XI and XII), where students will be more mature and their numbers considerably



smaller, Work Experience should be made available in school work-shops and also on farms and the industrial or commercial establishments.

It will appear that all the Commissions mentioned above manifestly highlighted the importance of productive work in school both from the utilitarian and the educational points of view.

The recommendation of the Education Commission as adopted by the Government of India. Ministry of Education, were considered by the State Government. The State Government as per Notification No. 2067-Edn (s) dt. the 11th November 1972, issued necessary directions and requested the West Bengal Board of Secondary Education to formulate a new school curriculum and detailed syllabi under the new pattern for Classes VI to X, with emphasis laid on the teaching of a socially useful and productive Craft or Trade.

Accordingly the Board formulated the new curriculum and syllabi under the Reorganised Pattern of Secondary Education which were introduced in January, 1974. In the new curriculum, Work Education has been included as one of the compulsory subjects. This is how the revised curriculum and syllabi were brought into being.

## **(II) Evaluation of the programme of Work Education :**

Since the introduction of the Reorganised Pattern of Secondary Education in 1974, eight years have elapsed and Madhyamik Pariksha (Secondary Examination) for six successive years has been held. The Board has been objectively evaluating the programme of Work-Education launched in the year 1974 for the last two years and more. Several meetings were held of experts in Work Education. Representatives of

various Teachers' Organizations, teachers of Agriculture of Secondary Schools, and the College of Agriculture at Sreeniketan, and some experts in Carpentry and Weaving at Sreeniketan were invited to attend for the purpose of evaluation and obtaining their views and suggestions for reforming and improving the programme of Work-Education which called for immediate attention of the Board.

In course of the evaluation certain facts of great important emerged due to which the programme of Work Education in many schools could not develop or progress properly.

The first Madhyamik Pariksha under the Reorganised Pattern of Secondary Education was held in 1976. It appeared that schools offered as many as 123 projects in the Madhyamik Pariksha, 1976. The number of projects stood reduced to some extent for the Madhyamik Pariksha 1977, 1978 and 1979. For the Madhyamik Pariksha, 1980 and onwards the Board prescribed 47 projects under different areas. A school is required to offer at least two projects out of the 47 prescribed for the Madhyamik Pariksha, 1980 and onwards. Some of the difficulties experienced by schools as surfacing in course of the evaluation are stated below :

- (1) The concept of Work Education could not be effectively disseminated in schools,
- (2) A large number of projects has been prescribed for the Madhyamik Pariksha of the Board. The projects were also not standardized.
- (3) No syllabuses (basic operations) in all the trades have been formulated.
- (4) There is a lack of properly qualified work education teachers in many schools for all the trades or projects introduced

- (5) There is a lack of physical facilities in many schools in the form of workshops and equipment.
- (6) It has not been possible for the Board to appoint properly qualified external examiners for its Madhyamik Pariksha for so many trades and crafts. So the results of evaluation in some cases were held to be unreliable.
- (7) There is a general apathy towards the work education programme owing to the fetish made of bookish education, an attitudinal holdover of the old system.
- (8) No effective steps could be taken to educate the public opinion with regard to the importance of Work Education within the system of secondary education.

It was, however, suggested by the participants in those meetings organised for the purpose of evaluation of the programme of work education that schools should meet parents and guardians to discuss the concept of Work Education and seek their co-operation in successful implementation of the scheme.

### **III. Work Education as the Board visualizes it :**

#### **(Concept of Work Education)**

Mudaliar Commission suggests craft as a valuable medium for the development of the emotional side of the mind and a student cannot be denied the intellectual and aesthetic pleasure of the value in the creation, undertaking and completing a piece of art or music or handiwork.

The concept of Work Experience as envisaged in the report of the Education Commission is closely related to the



philosophy underlying the basic education so far as the place of productive work is concerned. Work Experience, as the Education Commission visualizes it, is a reorientation of the basic education programme suited to the needs of a society that has to be transformed with the help of science and technology. **So, Work Experience must be forward-looking in keeping with the character of the new social order** The concept of Work-Education as is visualized by the Board at present is the **integration of productive labour into the system of school education** with a view to inculcating in the pupil the desired attitude, skill and knowledge. **Productive labour should provide a means for inward growth of the pupil as a step towards intellectual maturity and an outward growth as a small step towards the vibrant community that nourishes Society.** It should also help bring about a change in the attitude of the pupil towards productive labour by way of a corrective to purely academic and bookish character of the system of education that has been prevailing for long. Emphasis has been laid on Work Education and not on vocational training. The aim is not a training for a vocation but giving the pupil requisite training through a project in a craft or trade requiring work by hand, and thus to acquaint him with the concept of productive labour, to enable him to combine theory with every-day life. The aim is, therefore, primarily educational and within this broad concept the objectives of Work Education are defined as follows :—

1. To instil the dignity of productive labour into the pupil with a view to changing his attitude towards productive labour, or for that matter towards working people who produce and nourish society.
2. To teach him how to plan a work.
3. To develop his dexterity.



4. To discover the aptitude of the pupil for a certain type of work, if any, and foster his ability.
5. Last but not the least, to integrate work with education, i. e. to correlate the knowledge acquired with the work to be performed.

It would have been educationally wise, if it were possible to provide Work Experience for pupils as contemplated in the report of the Education Commission in addition to giving training in crafts in school workshops. But difficulties in arranging such programmes cannot be ignored as most of the farms, factories, works etc. are privately owned. Even then attempts may be made at providing some work experience for students of Classes IX and X in real life situations, such as work on farms at the time of harvesting and sowing or in a family production unit or in industrial and commercial establishments. For this purpose the authorities of schools may contact various Govt. departments at the district level, Zilla Parisad, Panchayat Samities and other organisations. It is hoped that the authorities of various organizations and Departments will render all possible help in the larger interests of education in our country.

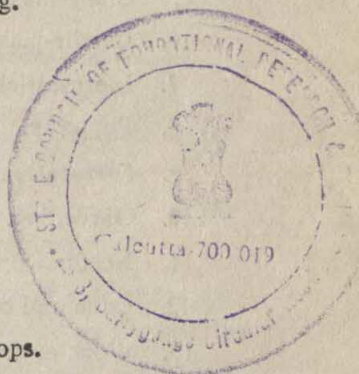
#### **(IV) Programme at the middle stage (Classes VI-VIII) :**

For the Middle Stage i. e. in Classes VI to VIII, it is considered desirable to expose the pupil to socially meaningful activities. In the first phase of the programme for Classes VI-VIII the aim is primarily to acquaint the pupil with the world of work in his environment.

The pupil should first of all observe and understand the nature and process of productive activities without getting himself directly involved in them.

The concern at this stage is not so much with production of socially useful things as with providing understanding of productive process in general. Some suggestive environment activities are given below :—

1. Agricultural farming.
2. Animal husbandry.
3. Transport system (Bullock cart, Cycle Rickshaw, Roadways, Waterways, Airways).
4. Rice Mill,
5. Bee-Keeping and poultry-keeping.
6. Gur (molasses) manufacture.
7. Plastic goods manufacture.
8. Small Industrial units.
9. Confectioneries.
10. Fruit preservation.
11. Ceramics.
12. Mat making.
13. Village smithy and carpentry shops.
14. Printing Press.
15. Paints manufacture.
16. Paper Mills.
17. Electrical goods manufacture.



But pre-adolescents normally bubble over with productive and creative impulses. The knowledge of environmental activities will reinforce their ardour for work. It will be educationally wise to provide channels for this nascent dynamic force to take concrete shapes in socially useful ways. So, even

in the first stage the pupil should be encouraged to engage himself in some simple, inexpensive, productive and creative activities without sophistication. Such simple activities will provide an outlet for his creative energy. A list of suggestions on such simple activities is given below :

1. Spinning.
2. Paper-cutting.
3. Cardboard work.
4. Clay modelling or working with plasticine materials.
5. Chalk-making.
6. Candle-making.
7. Incensestick-making.
8. Puppetry.
9. Preparation of articles of children's drama.
10. Gardening.
11. Needle work.
12. Cane and bamboo work.
13. Work on farms.
14. Book-binding, etc.

At the end of the Middle Stage, i. e. at the end of Class VIII pupils will acquire some experience and deeper understanding of productive processes through environmental activities. The knowledge of environmental activities will reinforce their ardour for work. They will also acquire some mechanical skill by engaging themselves in simple and inexpensive activities suggested above.

With this experience, knowledge and mechanical skill acquired at the end of the Middle Stage, pupils of Classes IX



& X should be got involved in some form of socially useful productive work in the second phase.

**(VI) Programme at the Secondary stage (Classes IX & X) :**

The items of socially useful productive work for Classes IX and X have been limited to eleven for the Madhyamik Pariksha (Secondary Examination) from 1984 and onwards. The number of items of work for Classes IX and X has been limited keeping in view the following facts ;

1. that qualified teachers may be available in schools.
2. that necessary physical and material facilities can be easily provided.
3. that items of work can be done in schools.
4. that practical examination can be taken in the Madhyamik Pariksha (Secondary Examination) of the Board by properly qualified external examiners.
5. that outlines of syllabuses (basic operations) in the prescribed items of work may be provided.

On the basis of the above-mentioned considerations the following eleven items of productive work are prescribed for Classes IX and X for the Madhyamik Pariksha (Secondary Examination) of the Board from 1984 and onwards.

1. Soap-making, Phenyl-making and Ink-making (any two)
2. Household wiring and electrical gadget repairing or the assembling and repairing of transistor (or radio).
3. Cultivation of Cereals (Rice and Wheat).
4. Cultivation of Jute
5. Growing of vegetables and flowers.
6. Growing of annual and biennial garden plants.



7. Elementary Spinning and Weaving.
8. Designing, Dyeing and Weaving.
9. Tailoring and Needle-Work.
10. Wood-Work.
11. Clay-modelling.

A School may introduce one project or more than one, but not exceeding three in Classes IX and X according to the size of the school and availability of qualified staff. But a student is required to perform only one project in Classes IX and X in which he will be examined in the Board's Madhyamik Pariksha (Secondary Examination) from 1984 and onwards.

Students of Classes IX and X may be divided into small sub-groups for the facility in performing practical work smoothly and effectively. At present two periods are available per week for work education for a Class. It may be convenient to hold work education classes for Classes IX and X on Saturdays for two periods at a stretch. Supposing 48 periods are available for Work Education in a year for Class IX and there are four sub-groups A, B, C, D. Group A and Group B may work jointly for two periods at a stretch. While Group A performs certain basic operations, Group B may perform alternate operations involved in the same project. The basic operations may be allocated to the two groups by the teacher judiciously. In this way each Group may be able to do 24 periods of practical work in a year. The remaining 24 periods may be allocated, also judiciously, to the writing of Work Books, integration of theoretical knowledge with practice, visits to farms, industries and works, social service and school performance. If a school has more than one class-unit in Classes IX or X, the work may be allocated to different groups on the same principle.

Alternative to this practice, a school may adopt distributed practice. In this process practical work may be allocated to different groups in such a manner that every group can do practical work exclusively for 24 periods in Classes IX and X, the remaining 72 periods being allocated to the writing of Work-Books, integration of theoretical knowledge with practice, visits to farms, industries and works, social service and school performance.

#### (IV) Involvement of teachers :

It has been laid down in the G. O. No. 772 Edn (s) dated the 8th July 1974, that all teachers should be involved in work education programmes and for such involvement two periods may be assigned to a teacher with corresponding adjustment in the total period of work per week. It boils down to this : though there is a Work-Education teacher in a school other teachers should also take part in the programme of Work-Education. As for example other teachers may take part in environmental activities prescribed for Classes VI to VIII. A teacher of Physical Science and a teacher of Life Science with some orientation may take up Physical Science based and Agricultural Science based activities. A teacher with a Degree or Diploma in Home Science may assist the Work-Education teacher in Tailoring and Needle Work. Similarly, a teacher with the Degree or Diploma in Fine Arts may teach clay-modelling and designing under "Weaving". In the same way a teacher of Physical Science may also teach Dyeing under "Weaving" and so on.

For this purpose orientation of teachers through Short Course training will be necessary. The Board has three Training Centres in Work-Education. In-service Orientation training courses, each of 10 days duration, in the different

trades prescribed, may be arranged by the Board for teachers of Secondary Schools.

A Work-Education teacher, in addition to taking practical classes, is expected to co-ordinate the activities of other teachers in consultation with the Head of the Institution. Local experts in the different trades may also be invited as and when necessary to assist the Work-Education teacher in his programme for practical work for students of Classes IX and X on payment of small honorarium which may be met out of recurring Government grants made for Work-Education

(VII) **Equipment** : Schools may require some equipment for implementation of the programme of Work-Education. The question of supplying minimum equipment for this purpose or sanctioning a token grant for purchase of equipment is under consideration of the Board.

#### (VIII) **Syllabuses** :

The basic operations involved in the eleven items of work are given in the annexure. A school should make plan of work for two years for classes IX and X on the basis of the basic operations outlined. In carrying on a project the following points may be kept in view :

(i) A project should be preceded or followed, as appropriate, by a study of related working situations in the neighbourhood. It is necessary that every student will study two or more business situations in the neighbourhood during the two year period even if those are not connected with the productive project or projects undertaken in a school. Students should keep records of their visits in their **Work-Books**.



(ii) Quantity of endproducts must be commensurate with the time available for work education in Classes IX & X. The quantity or number of end products should be recorded in work-books.

#### **(IX) Work-Book :**

Every student shall maintain a work book to record his work in Classes IX and X. The student should be given guidance by the teacher concerned how to maintain a Work-Book. The student should record his work neatly and regularly with a plan of work, details of work-processes step by step, description of materials and tools used.

The student should also record the previous knowledge applied and the new knowledge acquired, problems faced and solved and also determine the social and economic value of the project undertaken, with a note on the proposed use of products and innovations, if any. The Work-Book of the student should be regularly signed by the teacher concerned with his observations.

The following should be recorded in a Work-Book :

(1) Name of the project ; (2) Materials and tools used ; (3) Plan of work, process of work step by step ; (4) Daily record of work in the Work-Book ; (5) Learning experiences (correlated knowledge, skill and feelings) ; (6) Control of wastage and disposal of finished products ; (7) Amount or quantity of end-products ; (8) Costing, input and output relationship ; (9) Suggestions for innovations.

#### **(X) Product :**

The end products of a project should be usable and durable and commensurate with the time available for Work Education



in classes IX and X. The teacher concerned in his personal diary should record in respect of each student or a sub-group of students the number of amount of end-products as well as the teacher's estimate of excellence of the endproducts, viz. neat finish, proportion, accuracy, aesthetic quality, colour harmony etc. and also inventiveness, novelty and the resourcefulness of the student concerned. The end-products may be used and consumed by pupils concerned and so there is no need for preserving those products.

#### (XI) Attainment :

The teacher should ensure that the student attains the following abilities and knowledge through Work-Education :

- (1) Information (Factual information about tools, material processes and technique etc.).
- (2) Planning (Ability to plan a project).
- (3) Integration of knowledge (subject or environmental knowledge used in planning, ability to apply knowledge to practical Work-Education).
- (4) Critical appreciation of the student's own work ; ability to rank products according to merit, ability to identify relationship of his own products with social living ; identification of consumer-producer relationship ; understanding the value of productive labour ; appreciation of the value of Co-operative action ; ability to compare his own products available in the market,

#### (XII) Evaluation :

There should be a continuous evaluation of the work of the student by the teacher concerned and at the end of each term

the evaluation of work in respect of every individual student of classes IX and X should be made on Work-Book, practical work, and viva-voce. Marks under the different heads to be allotted are as follows :—

Work Book	...	10 marks
Practical work	...	20 „
Viva voce	...	20 „
(On Work-Book, attainment, product and practical work)		

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Total 50 marks.

At the end of every year the average marks of the two terms should be recorded by the teacher in his diary in respect of the work of a student, who may work individually or in a sub-group. The marks secured by a student in Work-Education in Classes IX and X should be averaged. Such average marks secured by all students should be securely maintained in a mark register because records of such internal assessments may be necessary in connection with the Board's Madhyamik Pariksha.

The allocation of marks in Agricultural-Science based projects may be as follows :

Work Book	...	10 marks
Practical work (identification of crops, tools, seeds fertilizers, chemicals, preparation of seed-beds etc.)	...	20 „
Viva voce	...	20 marks
(on Work Book, Field work, attainment, product etc.)		

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Total 50 marks.

In making internal evaluation the following points may be noted by the teachers :—

1. Regularity of attendance in Work-Education classes. A separate attendance register for Work Education should be maintained.
2. Progress made in the execution of a project should be assessed at regular intervals.
3. Both quality and quantity of the product of a project should be recorded in the Work-Book systematically.
4. The time limit of each project must be clearly defined. In fact the entire programme should be time-bound, each phase having a clear-cut time assignment. A note should be recorded in the Work-Book stating whether a project could be completed in time. If in the negative, the reasons for non-completion within the specified time limit must be stated and recorded in the Work Book.
5. It is quite natural that difficulties may crop up at successive stages in the process of working out a project. In such case, the nature of difficulties should be analysed and recorded by the student in his Work-Book. The reaction of the pupil, particularly his innovative capacity to remove the difficulties, if any, needs specially to be recorded in the Work-Book.
6. At times, help of locally available experts may be sought towards successful completion of a project. In all cases, the participation of experts should be recorded in the Work-Book.
7. It should be placed on record, if any works were visited by the student. In this connection, check-lists and group reports are to be submitted.



8. A comparative study of the cost involved in completing a project having a definite market value is always to be encouraged, Any parity in respect of expenses incurred cannot be expected, but the student should know the reasons for the variations of the cost,
9. The Head of an Institution should check Work-Books periodically with his countersignature.

**(XII) Evaluation of the performance of Work-Education in the Madhyamik Pariksha (Secondary Examination) of the Board.**

The allocation of marks outlined above will also hold good for the Madhyamik Pariksha (Secondary Examination) of the Board.

**(a) Criteria for assessment of Work-Book.**

It has been stated under para IX and XI how a student should maintain his Work-Book. The Work-Book should contain records of a project done in Classes IX and X including reports on visits to works. Some of the criteria for assessment are noted below.

1. Neat recording.
2. Regularity in recording and submission to the teacher of Work-Education.
3. Plan of work and its relation to the work done.
4. The details of work processes.
5. Description of material and tools used.
6. Previous knowledge applied and new knowledge acquired.
7. Problems faced and solved.
8. Determination of the social and economic value of the project.



9. Amount or quantity of end-products.
10. A note on the usability of the products.
11. Cost analysis.
12. Self-appraisal of the process and products

#### «(b) Practical Work :

practical examination will be conducted by the Board's external examiners who will visit every school for this purpose. An external examiner visiting a school may examine the candidates in batches, each batch consisting usually of not more than ten candidates. About 40 to 50 minutes may be required for examining a batch of candidates. Every candidate may be asked to perform one or more basic operations involved in a project.

The authorities of High Schools should arrange for equipment and raw-materials for the purpose of practical examination sufficiently ahead of the date fixed for practical examinations.

#### (c) Viva voce :

Through viva voce, attainments will be assessed as outlined under para XI.

**Basic operations involved in the Syllabuses in Work-Education.**

#### (I) Soap and Phenyl making, Ink making.

##### SOAP-MAKING

The following basic operations are involved.

- (1) Determination and preparation of Caustic lye (Caustic Soda Solution).
- (2) Firing Ovens.

- (3) Selection of raw-materials : (a) Fatty Oils and fats fatty acids, rosin, (b) Chemicals—water, alkalies, salts, filters colours and perfumes.
- (4) Weighing different-raw materials as per formulae.
- (5) Heating the oil-charge upto the required temperature.
- (6) Saponification of oils with Caustic lye.
- (7) Mixing sodium silicate and soap-stone with soap.
- (8) Pouring the finished soap into (cooling frames,
- (9) Cutting Soap into required size and shape.
- (10) Wrapping the soap-cakes in wax-paper.
- (11) Storing the soap for sale.

#### PHENYL—MAKING.

- (1) Determination and preparation of Caustic lye.  
(Caustic Soda Solution).
- (2) Firing Ovens.
- (3) Selection of raw-materials : (a) Fatty oils and fats fatty acids, rosin ; (b) Chemicals—water, alkalies Creosote oil etc.
- (4) Weighing of different raw materials as per formulae.
- (5) Heating the oil-charge upto required temperature.
- (6) Saponification of oil with Caustic lye.
- (7) Mixing Creosote oil with liquid soap prepared.
- (8) Cooling the mixture and bottling the mixture.
- (9) Labelling bottles and storing them for sale.
- (10) Cost analysis.

### **Ink-making :**

The following Basic operations are involved :—

- (1) Preparation of distilled water or collection of soft water.
- (2) Arrangement of utensils.
- (3) Warming of the solvent.
- (4) Selection of raw-materials :—
  - (a) Tannic Acid, (b) Galic Acid, (c) Ferrous Sulphate. (d) Hydrochloric Acid, (d) Carbolic Acid, (f) Ink blue or any other desired colour.
- (5) Weighing of different raw materials as per formula.
- (6) Preparation of three basic solutions, viz :—
  - (a) Acid solution with distilled water.
  - (b) Ferrous Sulphate solution with water.
  - (c) Dye solution with water.
- 7) Mixing of the above three solutions and adding distilled water to attain the desired volume.
- (8) Sedimentation, decantation and filtration.
- (9) Bottling, labelling and storing for sale.
- (10) Cost-analysis.

### **II. Housewiring and Electrical Gadget repairing or Transistor (or Radio) assembling and repairing :**

- (1) Control of current flow—different types of resistances, use and repair of plug-key, tapping-key, switch, commutator, fuse.
- (2) Practical application of heating and lighting effects of electric current.  
Use and repair of electric stove, heater, kettle, iron.



- (3) Idea about electrical filament-lamp, fluorescent-lamp, safety electric fuse.
- (4) Household wiring.

**Basic-operations :**

- (a) Verification of Ohm's Law ; Measurement of resistance-current and voltage-study of series and parallel circuits of E. M. F.
- (b) Simple designs (based on problems) :  
Simple circuits consisting of lamp, fan, regulator, tube-light, plug-point, main-switch, distribution box.
- (c) Routine tests on the wiring insulation set-up by students.

**(5) Transistor assembling and repairing :**

**Basic-Operations :**

- (i) Drawing diagram of a Receiver, Sketching of symbols and circuits of a Receiver,
- (ii) Working of switches and Potentiometers. Verification of Ohm's Law—Measurement of Resistance, current and voltage.
- (iii) Study of the construction of condensers, chokes, transformers.
- (iv) Study of the construction of Loudspeaker.
- (v) Working of Avometer, Voltmeter and Ammeter.
- (vi) Simple Radio Experiments.
- (vii) Localisation faults in a Receiver.



(viii) Construction of—(Medium wave 100 to 550 metres).

**One-Transistor Receiver Experiment.**

Two-Transistor	"	"
Three-Transistor	"	"
Four-Transistor	"	"
Five-Transistor	"	"
Six-Transistor	"	"
Seven-Transistor	"	"

(ix) Servicing of Transistor Receiver,

(x) Cost analysis.

**Equipment required for**

**HOUSE-WIRING, ELECTRICAL GADGETS &  
TRANSISTOR REPAIRING**

**(A) HOUSE-WIRING & ELECTRICAL GADGETS**

**Instruments (for each group)**

1. Combination pliers 8"—1 piece
2. Cutting pliers 6" — "
3. Neon tester — "
4. Connecting Screw-driver "
5. Screw-driver 6" "
6. " " 10 "
7. Hammer 4oz "
8. Wood-cutting chisel  $\frac{1}{2}$ " "
8. Bradawl "
10. Knife "
11. Hacksaw 12" complete
12. Hand-drill  $\frac{3}{16}$ " "

**Common Materials 1**

- |                  |         |
|------------------|---------|
| 1. Heater        | 1 piece |
| 2. Electric iron | "       |
| 3. Calling bell  | "       |
| 4. Bell battery  | "       |
| 5. Coils         |         |

1/1044 single core PVC 20 yards

" twin " " 10 "

3/1036 single " " 5 "

" twin " " 5 "

23/36 flexible wire 5 "

**Materials (for each group)**

- |   |          |   |              |
|---|----------|---|--------------|
| 1. Wooden single board                        | —3' × 2' | — | 1 piece      |
| 2. Switch board 8' × 6"                       |          |   | "            |
| 3. do 6" × 4'                                 |          |   | 2 pieces     |
| 4. Joint box 6" × 4"                          |          |   | 2 "          |
| 9. do 4 × 4"                                  |          |   | 2 "          |
| 6. Two-way distribution box                   |          |   | 1 piece      |
| 7. Batten $\frac{1}{2}$ "                     |          |   | 10 feet      |
| 8. do $\frac{3}{4}$ "                         |          |   | "            |
| 9. Round block 3"                             |          |   | 4 pieces     |
| 10. Plastic batten holder                     |          |   | "            |
| 11. Plastic Pendent holder                    |          |   | "            |
| 12. Link clip-125, 150, 175                   |          |   | 2 boxes each |
| 13. Brass Pin                                 |          |   | 100 gr.      |
| 14. Connector-1-way, 2-way                    |          |   | 1 doz. each  |
| 15. Screw- $\frac{1}{2}$ " $\frac{3}{4}$ " 1" |          |   | 3 doz. each  |
| 16. Switch 250 V—Tumbler                      |          |   | 6 pieces     |
| 17. — do — Piano                              |          |   | "            |
| 18. — do — 2-way                              |          |   | 2 "          |
| 19. Main switch-15 Amp,                       |          |   | 1 piece      |

## (B) TRANTSJSTOR REPAIRING

Materials for M, W. 6 volt : (for each group)

1. Transistor-1 piece each  
AC 128, 128  
BF 194B, 194C, 195D  
BC 148B  
Crystal OA 79
2. Condensor—3 pieces each  
Mfd 200, 100, 10, 5, 05, 01,  
02, 005  
Pf 47, 333
3. Resistance ( $\frac{1}{2}$  watt) —3 pieces each  
Ohm 820, 47, 220, 390, 15, 470  
Kilo-Ohm 330, 220, 15, 150, 33, 1, 82.
4. For each set —  
Connecting wire, Sleeving tube,  
Ferrite rod stand, Dial cord.  
Needle, Drum, Trag strip, Spindle,  
Knob, Pully, Banana plug, Nut & Bolts.
5. OSE & ANT Coil—M wave 1 set  
I. F. Transformer set                    "  
Driver transformer                       "  
Ferrite rod 10"  
Timer                                       2 pieces  
Gang Condenser PVC                   1 piece  
Volume control 10K with switch—1 pc.  
Loud-speaker 4"                               "  
Head-phone                                       "  
Chasis   "  
Printed board                                       "  
Battery with box                               4 pieces.  
Battery with box                               4       "

**Instruments (for each group)**

- |                            |             |
|----------------------------|-------------|
| 1. Pliers 8"               | 1 piece     |
| 2. Cutting pliers 6"       | "           |
| 3. Connecting screw-driver | "           |
| 4. Screw-driver 6"         | "           |
| 5. — do — 10"              | "           |
| 6. Soldering iron 60 watt  | "           |
| 7. Soldering paste         | 1 small box |
| 8. Solder                  | 5 yards     |

**Common Instruments**

- |                               |         |
|-------------------------------|---------|
| 1. Avometer (Snawa make-p 18) |         |
| 2. Net aerial                 | 1 piece |
| 3. Hacksaw 12" complete       | "       |
| 4. Hand-drill 3/16"           | "       |
| 5. Bradawl                    | "       |
| 6. Flat file 8"               | "       |

**(III) Cultivation of Cereal (Rice and wheat)**

- (1) Selection of a plot and preparation of land,
- (2) Selection of cereals to be cultivated according to the need.
- (3) The growing of seedlings.
- (4) Manuring (by cow-dung or compost).
- (5) Transplanting seedlings.
- (6) Inter-cultural operations—watering, weeding, manuring etc,
- (7) Watching the growth of plants and their fruit.
- (8) Harvesting of crops.
- (9) Evaluation including cost-analysis,



**(IV) Cultivation of Jute :—**

- (1) Preparation of land.
- (2) The sowing of seeds.
- (3) Application of manures and fertilizer.
- (4) Inter-cultural operations—irrigation, drainage, weeding etc.
- (5) Harvesting.
- (6) Processing—retting and extraction of fibres from plants.
- (7) Disposal of jute fibres.
- (8) Evaluation including cost analysis.

**(V) Growing of vegetable and flowers :**

- (1) Preparation of a seed-bed,
- (2) Raising of seedlings from the seed-bed.
- (3) Transplanting of seedlings.
- (4) Inter-cultural operations—watering, manuring etc.
- (5) Harvesting.
- (6) Disposal of products.
- (7) Lay-out and maintenance of school laws.

**(VI) Growing of annual and biennial garden plants (Horticulture) :**

- (1) Selection of plants.
- (2) Planning of formal and informal gardens.
- (3) Preparation of pits for plantation (digging)
- (4) Manuring the pits (filling)
- (5) Transplanting.
- (6) Inter-cultural operations—watering, mulching, weeding, manuring, training and pruning.

**(VII) Elementary spinning and weaving,**

**(VIII) Designing, dyeing & weaving.**

**A. Syllabus in Spinning :**

(Based on cotton spinning with Takli/Box charka/Ambar Charka)

**Basic knowledge to be provided (theory)**

Only elementary and related knowledge to be provided on—

1. Spinning—the fundamental principle of spinning process.
2. Different parts of a takli and/or charka and their functions, other tools and machines (comprising the set) and their functions.
3. Selection of cotton.
4. Mixing of cotton.
5. Principal cotton growing countries in the world and quality of cotton they grow.
6. Draft, twist and count—their relationship.
7. Spinning of yarn of desired count.
8. Determination of count and strength of yarn spun.
9. Costing.
10. Storing of cotton and yarn ; maintenance of spinning machines, tools and equipment.

**Basic operations to be performed (practice) :**

1. Ginning.
2. Cleaning.
3. Mixing (if necessary).
4. Breaking, opening and loosening the lumps (cotton).
5. Carding.
6. Slivering.
7. Setting and adjusting the spinning machine (while spinning with a charka).

8. Spinning.
9. Hanking.
10. Finding the count and strength of the yarn spun.
11. Care and storing of ginned cotton and yarn spun.
12. Maintenance of tools and equipment.

N. B : The spinning process may start with unginned cotton or ginned and packed/baled cotton. Accordingly, the spinning process may start with the operation No. 1 or the operation No. 2. If subsequent processes leading to spinning follow immediately after ginning, the question of carrying out operation no. 4 does not arise.

### **Evaluation Procedure :**

Evaluation should be made in two ways :

1. Testing students on the job.
2. Taking an oral test.

### **Testing students on the job :**

Job test can be taken on the following operations :

1. Ginning.
2. Carding.
3. Slivering.
4. Setting and adjusting the spinning machine (charka) for a particular count (in case of Ambar Charka) Or N. M. C.
5. Setting and adjusting other machines in the set (in case of Ambar Charka) Or N. M. C.
6. Setting a charka for spinning (in case of box charka).
7. Spinning.
8. Hanking.
9. Finding out the count of a given sample of yarn.
10. Finding out the strength of given sample of yarn.

**Taking an oral test :**

Oral test should take the form of direct questioning and/or throwing a problem (s) for solution.

Given below are some hints in this regard :

(a) In the form of questions :

(b) In respect of a particular operation—

(i) What was done ? (ii) How was it done ? (iii) Why was it done so ? (iv) What precaution(s) was followed while carrying out the operations ? (v) Why such a precaution(s) was followed ?

2. Suitable questions based on the items under 'theory' and 'practice'.

(b) In the form of problems :

(i) To ask to set a spinning machine (Charka) for a particular count of yarn to be spun (in case of an Ambar Charka) or N. M. C.

(iii) To ask to set some other machine (s) of the set (in case of an Ambar Charka) or N. M. C.

(iii) To ask to set a charka for spinning (in case of a box charka).

**Spinning machine, tools and equipment :**

Item	Number
1. Takli (if used)	one for each student working at a time.
2. Box charka (if used.)	—do—
3. Ginning equipment (if unginned cotton is used)	one set for each of the groups working at a time.



Item	Number
4. Equipment for making silver—'Panj Pin' ?	—do—
5. Ambar Charka or N.M.C. (if used)	One complete set for each of the groups working at a time.
6. Strength testing machine	2
7. Count testing machine	2
8. Equipment for hank-ing	One set for each of the groups working at a time.

N. B. Purchase to be made according to the spinning machine used i.e. takli/Box charka/Ambar Charka or N. M. C. (new Model Charka).

#### (B) Syllabus in Dyeing :

Based on dyeing with 'Procion' group of dyes on cotton and/or jute and/or woollen yarn.)

Procion dyes are a type of reactive dyes. They have several advantages over other dyes. The dyeing process of these dyes is simple and easy, can be very effectively and conveniently applied to a wider range of materials—cotton, silk wools, jute, linen, rayon and nylon. A wide range of good shades are available. Shades are more or less fast or, rather almost fast. Lesser number of auxiliary chemicals and of low cost are necessary while the dyes themselves are comparatively cheap. They are being extensively used at present with increasing popularity.

**Basic knowledge to be provided (theory)**

Only elementary and related knowledge should be provided on :

1. A very general, brief and simple introduction to dyeing—the Dye and Dyeing, various classes and types of dyes, dyes and their application to different materials and limitation of application, dyeing process—pre-dyeing processing of materials, dyeing methods and aftertreatments, use and importance of auxiliary chemicals, dyeing machines and appliances, names of dyes and dye manufacturing companies.
2. Procion Dyes, Properties, uses, advantages and disadvantages, kinds of Procion dyes and dyeing methods.
3. Dyeing apparatus and equipment and their uses.
4. Preparation of materials for dyeing—scouring, bleaching etc.
5. Procedure—dyeing proper—cold process and hot process.
6. Aftertreatment—soaping.
7. Washing—with ordinary and acid water, washing at different stages.
8. Recipe—Recipe for M—dyes and H dyes.
9. Chemicals for scouring, bleaching and dyeing—their properties, uses and functions :

Sodium carbonate, caustic soda, dedonal super—'N' liquid, Bleaching powder, Hydrochloric acid, Hydrogen Peroxide (40%), Sodium silicate, whitening agent (tinopol), Common salt, Glauber's salt, Soap (washing).

10. Handling and preservation of dyes and Chemicals.
11. Costing.
12. Care and maintenance of dyeing apparatus and equipment.

**N. B.**

- (a) Chemicals given under 9 above have specific uses in respect of treatments, like scouring and bleaching and dyeing itself as well as materials like, jute, cotton etc. These materials need not be discussed all at a time, rather be discussed as and when necessary.
- (b) Discussion on bleaching can be avoided if not done with. However, a reference should be made of it.

**Basic operations to be performed (practice)**

(i) Scouring (ii) Bleaching (iii) Preparation of dye-liquor (iv) Preparation of dye-bath (v) Dyeing (vi) Soaping (vii) Washing after scouring, bleaching (if done), dyeing and soaping (viii) Drying and storing—after scouring and washing, after bleaching (if done) and washing—if the materials are not readily passed on to the subsequent processes, after soaping and washing, storing of dyes and chemicals. (ix) Maintenance of equipment—washing, cleaning and storing.

**N. B. :** Bleaching can be avoided, if not intended.

**Evaluation Procedure :**

Evaluation should be made in two ways :

1. Testing students on the job.
2. Taking an oral examination.



**Testing students on the job :**

Job tests can be taken on the following operations :

- (ii) Scouring (if done) complete with washing.
- (iii) Dyeing including preparation of dye liquor and dye-bath and soaping and washing.

N. B. To cope with time the 'soaping' operation may be kept out of students performance while testing them on the job in dyeing. The dyed materials thus left by students, however, must be get soaped by some other persons as soaping is absolutely essential for procion dyes for fixation as well as fastness to washing.

**Taking an oral test :**

Oral test should be taken in the form of direct questioning/ and/or throwing a problem (s) for solution. Given below are some hints in this regard :

(a) In form of question :—

1. In respect of a particular operation :—

(i) What was done ? (ii) How was it done ? (iii) Why was it done so ? (iv) What precaution (s) was followed in carrying out the operation ? (v) Why such a precaution (s) was followed ?

2. Suitable questions based on the item under 'Theory and Practice'.

(b) In the form of problems :

1. To ask to work out recipes for the following processes with given specification :

(i) Scouring, (ii) Bleaching, (if done), (iii) Dyeing, (iv) Soaping.



**N. B. :** The quantities of chemicals and materials to be shown in terms of pc. as well as in exact weights or volumes.

2. To ask to make out a requisition for chemicals, apparatus and equipment for a particular process with given specification.

### **Apparatus, equipment and chemicals.**

#### **A. Apparatus and equipment.**

Item	No.
1. Vat/Karai	1
2. Galvanised bucket—12"	2
3. Mortar and pestle no. 4	2
4. Measuring cylinder—Plastic (1000 cc)	1
5. Pastula—	2
6. Table spoon	2
7. Wooden roller—1" dia & 3" long	4
8. Enamelled Bati—medium size	2
9. Stove/oven	1
10. Chemical balance (with weights in Gms.)	

**N. B.** Item no. 1—9 for each of the groups working at a time. Item no. 10 for all groups.

#### **B. Dyes and chemicals.**

1. Dyes stuff (shades as required)
2. Sodium carbonate.
3. Caustic soda.
4. Dedonal super 'N' liquid.
5. Bleaching powder.
6. Hydrochloric acid.
7. Whitening agent—tinopol,

8. Hydrogen Peroxide (40%)
  9. Sodium silicate,
  10. Common salt
  11. Soap (washing)
- } Glaubers's salt.

N. B. (a) qualities would be according to the volume of works.

(b) Item no. 8 and 9 are required in case of jute bleaching.

### (C) Syllabus in Weaving

Based on : (a) Type of articles, like side bag, cloth and handle, Muffler, Pillow cover, Ashan, Table mat etc.

(b) Working on such looms as Monipuri loom and/or Visva-Bharati Hobby Loom and/or Babyloom,

(c) Using materials, like cotton and/or jute and/or woollen yarn,

(d) Using simple and elementary designs, and,

(e) Minimum two different types of jobs to be practised using, preferably, two different types of loom.

### Basic knowledge to be provided (theory) :

Only elementary and related knowledge should be provided on—

1. Meaning of Textile, Weaving, Yarn

2. Different parts of a loom and their functions, accessories and their functions.

3. Planning a job—Weaving particulars,
4. Selection of yarn.
5. Meaning of (a) count of yarn (b) count of Reed (c) Count of Heald.
6. Determination of count of—(a) Yarn, (b) Cotton yarn, (c) Jute yarn, (d) Woollen yarn, (e) Reed, (f) Heald.
7. Simple calculation of—  
(a) Warp and Weft, (b) Heald.
8. Method of cloth making—Weaving, Knitting and Felting
9. Designing—types of textile designs, design paper and its use, repeat.
10. Elementary designs—Plain, Twill—ordinary, Zig-zag, Diamond, Honey comb, Huck-a-Back etc,
11. Warp preparation—Winding, warping, beaming, drafting, denting and looming, weaving shedding, picking, beat-up, take up, let off.
12. Costing.
13. Maintenance of tools and equipment; storing of materials and finished products.

### **Basic operations to be performed (practice) :**

Starting with yarn in Hank form (dyed, undyed or grey yarn), in case of work on a loom other than a Manipuri or Visva-Bharati Hobby loom or Baby loom.

1. Bobbing winding, 2. Warping, 3. Beaming 4. Drafting
5. Denting, 6. Looming (tie-ups) 7. Prin winding 8. Weaving,
9. Finishing.

In case of work on a Visva Bharati Hobby loom or Baby loom or Manipuri loom—

1. Bobbin winding
2. Warping (Including both denting and drafting or drafting only)
3. Pirn winding
4. Weaving
5. Finishing

### **Evaluation Procedure**

Evaluation should be made in two ways .—

- (1) Testing students on the job.
- (2) Taking an oral test.

### **Testing students on the job.**

Job test can be taken on the following operations :

- (I) Bobbin Winding and pirn winding with the help of a winding Charka.
- (II) Warping following a given colour scheme.
- (III) Warping following a given colour scheme along with a given denting and drafting order (both) or drafting order only.
- (IV) Drafting on a given order.
- (V) Denting on a given order,
- (VI) Looming.
- (VII) Weaving a few inches or a few repeats (as might be convenient)
- (VIII) Fitting up of a winding charka.
- (IX) Repair of a broken end on the loom.
- (X) Making healds for a Visva Bharati Hobby Loom or a Manipuri Loom.

N.B. Item nos. II, IV, V, VI—in case of work to be done on a loom other than a Hobby or Baby loom or a Manipuri Loom.

Item No. III—in case of a work to be done on a Hobby/ Baby Loom or Manipuri Loom.



**Taking an oral test**

Oral test may take the form of direct questioning and or throwing a problem(s) for solution.

Given below are some hints in this regard :

(a) In respect of a particular operation –

(i) What was done ? (ii) How was it done ? (iii) Why was it done so ? (iv) What precaution(s) was followed while carrying out the operations ? (v) Why such precaution(s) was followed ?

(a) Suitable questions based on the item under 'Theory and Practice'

(b) In the form of problems :

(i) To ask to plan a job according to a desired type of cloth,

(ii) To ask to make a requisition of materials and tools & equipment for a particular job in view.

(iii) To ask to work out a given design on a design paper along with the drafting and lifting order for it.

(iv) To ask to calculate the quantity of warp yarn an/or weft yarn for a given job

**Tools and equipment :**

[ Considering 30 students in classes IX & X each and six groups in each class, = each group having 5 students. ]

Item	No. or quantity.
1. Visva-Bharati Hobby loom or Baby loom (complete with reed, beater, and iron rods)	6 Nos.

Item	No. or quantity
2. Monipuri loom— complete	30 Nos. (1 for each student)
3. Table loom 16"/18"/ 20" Ps.	6 Nos.
4. Mrite Healds—round head	4000—4,500
5. Steel Reed	Court, length and number as required,
6. Iron rods	
(a) $\frac{1}{4}$ " $\times$ 18"/20"/22"	1 doz.
(b) $\frac{1}{4}$ " $\times$ 24"/26"/28"	3 doz.
(c) $\frac{3}{8}$ " $\times$ 18"/20"/22"	2 doz.
7. Galvanised/Iron rods $\frac{1}{8}$ " $\times$ 18"/20"/22"	5 doz.
8. Krishna Katim no. 4	6 Nos.
9. Winding charkas (with spindle) and Charki	6 sets.
10. Peg warping frame (3'—4')	6 nos.
11. Crul—ladder type— 20 bobbin capacity complete with sticks	6 nos
12. Bobbin 6" Haldoo wood Minimum— 20 Bakbinesper Table loom and 10 Bobbins per hobby loom)	200 pieces.
13. Prin—4'	100 pieces.
14. Throw shuttle	$1\frac{1}{2}$ doz.
15. Drawing hook	1 doz.
16. Weaving comb	6 Nos.
17. Oil can	1 No.
18. Scissors - Tailor's	1 No.

19. Measuring tape 50' x 5'	1 No.
20. Sand paper medium count—a few sheets.	
21. Hack saw for cutting iron rod	1 No.
22. Flat file—small	1 No.
23. Hammer—medium	1 No.
24. Chisel	1 No.
25. Bill Book	1 No.
26. Hand saw—Small	1 No.

#### (D) Designing

##### (a) Basic knowledge.

1. Principles of Fabric Structure.
2. Cloth analysis.
3. Use of Design paper.
4. Knowledge about elementary Designing.  
(to a maximum of 4 shafts)  
Plain, Twill, Diamond and Honey Comb.

##### (b) Basic operations :

1. Decoration of Design paper—Colour and wave.
2. Calculation of Drafting and Lifting of a Design.
3. Ornamentation of plain cloth—Twill, Diamond and Honey Comb.
4. Maintaining Diary and Work Book.

**(E) TAILORING AND NEEDLE WORK.**

**Class—IX**

**Items of work :**

**1. Practice in Stitches**

Run, Hem, Back-stitch to be taught compulsorily  
and

**any one from the following :**

French Knot, Satin, Button-hole stitch, Kashmiri.

**2. Sewing and Knitting :**

Only one table cloth, one square metre in size, using any one of the stitches under (1), and any one item from the following :—

Jangia, Baby-frock, toys, patch-work on cotton cloth, woollen clothing.

**3. Tailoring :**

Any one of the following :

Payjama, Frock, Blouse.

**4. Ironing, Washing and Stain removing.**

**Class—X**

**1. Further practice in stitches :**

Samples of **any two** of the following stitches :

Kashuda, Chikon, Alique, Cross-stitch, Gujrati smoking.

**2. Sewing & Knitting :**

Any one of the following :

Tray cloth, cap, socks, woollen blouse, Sweater or Cardigan.



**3. Tailoring : Any one of the following :**

Petticoat, School Uniform.

**4. Ironing, Washing and Stain removing.**

**N. B. :—**

The tailoring part of the syllabus can be worked out without a sewing machine. If, however, a school can afford a sewing machine, two additional items, viz. (1) acquaintance with the parts of a sewing machine, embroidering machine and (2) how to oil, clean and set the parts of a sewing machine aright, should be introduced in the syllabus.

Pupils should learn the Cutting of various garments practising first on pieces of paper, then on old used cloth, and finally on new cloth.

**(F) WOOD—WORK :**

**Syllabus of Wood Work for Classes IX & X :**

**Suggested list of Jobs**

The Syllabus has been prepared based on the suggested list of jobs as below :—

**Group—‘A’**

1. Simple Toy Hen, Deer, Crane) 2. Cuprest (Square, Round, Hexagonal, Octagonal) 3. 12" Scale 4. Piri
5. Khunti 6. Pencil Box (without joint) 7. Pitcher stand 8 Paper cutter.

**Group—‘B’**

2. Book stand 2. Tea Tray (with Dovetail joint)
3. Pencil Box (with half lap joint) 4. Jalchowki (with Tenon Mortise joint) 5. Photo Frame (with

Mitre joint) 6. Rohel 7. Spoon 8. Bowl (curving work) 9. Roller 10. Wood turning (The students may have some practice on turning works if time permits.)

N. B. Minimum two jobs to be worked in each class—one from Group 'A' and the other from Group 'B' i. e. two jobs in each class)

### Group—'C'

[Assessment would be made only internally) Supervision and petty repair of Door & Window and furniture of the School.

N B. Students should be divided into small groups for work under this group 'C'.

### Basic knowledge to be provided (Theory)

Only elementary and related knowledge would have to be provided on :—

- (1) Meaning of wood technology, Tools Technology, Wood, Timber, Log.
- (2) Growth & Structure of timber-Grains.
- (3) Seasoning.
- (4) Defects of Timber.
- (5) Working Bench—its different parts and their functions.
- (6) Selection of Wood
- (7) Wood work processes-Measuring, Sawing, Marking, Planing, Sizing, Chiseling, Polishing & Finishing.
- (8) Requisitioning.
- (9) Wood working Materials (Such as, Sand paper, Nail, Screw, Putty, Glue etc.)
- (10) Wood working tools & Equipments.

- (11) Simple Calculations.
- (12) Drawing the Plan-Isometric View. Orthographic View.
- (13) Costing.
- (14) Maintenance of tools & Equipment, Storing of materials and finished products.
- (15) Planning a job—Selection of wood. Tools and Materials, drawing the plan, technique to be followed, costing.

**N. B.** The writing of the items of knowledge above is no sequence in any way. In fact, there can be no sequence as such in this regard. Also, these need not be provided all at a time, rather, they would be provided as and when necessary. Further, separate theory class may not be required for many of the above items of knowledge, those may be given to the students while they are at the working bench.

#### **Basic operations to be performed (Practice)**

- (1) Measuring
- (2) Sawing
- (3) Planing and Marking
- (4) Sizing
- (5) Chiseling
- (6) Scraping
- (7) Sand papering
- (8) Polishing & finishing

**N. B.** All the operations are not required for all the jobs as suggested in the list. Particular operation involved in a job should be practised.

#### **EVALUATION PROCEDURE**

Evaluation would be done in two ways—

- 1. Testing the students on the job
- 2. Taking an oral test.



### Testing the students on the job

On the job test would be taken on the following operations :

1. Measuring
2. Sawing
3. Planing
4. Marking
5. Sizing
6. Chiseling
7. Scraping
8. Sand papering
9. Polishing

### Taking an oral test

Oral test would take the form of direct questioning or throwing a problem(s) for solution. Given below are some hints in this regard :

#### (A) In form of questions

1. In respect of particular operations—
  - (i) What was done ?
  - (ii) How was it done ?
  - (iii) Why was it done so ?
  - (iv) What precaution(s) was followed while carrying out the operation(s) ?
2. Suitable questions based on the items under theory & practice.

#### (B) In form of problems -

- (i) Planning a job according to a Drawing.
- (ii) Making a requisition of materials and tools & equipment for a particular job in view.



- (iii) To make a working drawing (Orthographic view from an Isometric view).
- (iv) Costing of a job (with the help of a given drawing and rates of materials)

N. B. The number of test items for a candidate as well as to the extents to which a candidate would be tested would depend upon the maximum time that would be available for testing each candidate.

## TOOLS AND EQUIPMENTS

(For a group of 30 students working at a time Proportion should be reduced if the number of students in a group is less).

Items with specification	Quantity
1. Double working Bench	5
2. Iron Plane 14"	10
3. Wooden Jack plane	3
4. Wooden Smoothing Plane	3
5. Spoke shave	3
6. Scraper (Round & Triangular)	2 each
7. Hand Saw 18"	10
8. Tenon Saw 12"	10
9. Dovetail Saw 12"	5
10. Hammer $\frac{1}{2}$ to 126	10
11. Firmer/Bevel Chisel $\frac{1}{4}$ " to 1" (6 in a Set)	5 sets
12. Morties Chisel $1/8$ " to $\frac{1}{2}$ " (4 in a set)	2 sets
13. Gauge Chisel (for curving, in a set)	1 set
14. Marking Gauge	10
15. Foot rule (2', four fold)	10
16. Try Square (Mutam) 6'8"	10
17. Sash Cramp 4' (length)	2

18.	Wooden Mallet	10
19.	File (Smoth, Rasp)	4 each
20.	Oil Stove 6' & 2'	2
21.	Grinding Stone 8" dia	1
22.	Screwdriver 6" to 12"	5
23.	Hand drill with bits	1
24.	Ratchet brace with bits	1
25.	Plyers	1
26.	Pincer	1
27.	Karai (Iron Small)	1
28.	Kerosine Stove	1
29.	Bucket (Iron) 8"	1
30.	Almirah (For keeping tools) 6' & 3' X 18'	1

### Materials

1.	Screw & Nail of different sizes.	As required
2.	Fevical/Animal Glue	"
3.	Pucca Putting	"
4.	Sand Paper i. e. 50, 60, 80, 100, 120, 150	"
5.	Polish-Wax/Spirit Polish (Shaluck)	"
6.	Sized Timber-(Teak, Gamber, Murga, Sisoo, & Timbers locally available)	"

(Articles and equipment may be provided according to actual requirement out of the list suggested above).

### (G) CLAY-MODELLING

#### CLASS-IX

1. Introduction of painting materials.
  - (i) Pencil drawing (from memory and nature).
  - (ii) Simple linocut and potato-block making

2. Clay modelling. Introduction of (a) different characteristics of clay ; (b) suitable and useful tools
  - (i) Preparation of clay for modelling.
  - (ii) Simple clay-modelling—toys of fruits, birds and animals ; decorative designs on earthen slab and any other relief work on the same.
  - (iii) Clay-modelling of different limbs, e.g. ear, nose, eye, hand, foot etc.

### CLASS—X

1. (i) Drawing and sketching (from memory and nature) —human figures, animals, trees and flowers.
- (ii) Woodcut and stenciling.
- (iii) Lettering with ink and colour.
2. Clay modelling.
  - (i) Study in human body and animals in clay.
  - (ii) Composition from memory—relief.
  - (iii) Proper terra-cotta making.

**Revised Syllabus in Physical Education, including Social Service and School performance for Classes VI-X of Secondary Schools to be effective from January 1982.**

**1. Introduction :—**

The curriculum and syllabus in Physical Education, including social service and school performance, were introduced in the reorganised pattern of secondary education as a compulsory examination subject in the year 1974 and final examination thereon commenced from the year 1976.

It has been experienced that many schools in the state could not profitably use this syllabus for want of technical as well as adequate facilities in terms of playground, equipment, finance, etc.

Hence, it has been decided at three meetings of the representatives of various Teachers' Associations and experts in physical education that the existing syllabus should be rearranged into three groups, namely, Core, Elective and Voluntary. All activities in the core group and any two from the elective group should be compulsory for all boys and girls from Class VI to Class X for the purpose of examination. In addition to these activities, any other activity from the left-out items of the elective group and from the list of voluntary activities may be introduced in the school and practised outside school hours and no time should be allotted for these during school hours. Boys and girls selected for voluntary activities should not be examined in those activities.

**2. Objectives :—**

The syllabus aims at the development of :—(a) Good health, (b) good habits relating to sleep, food, exercise and



hygiene, (c) All round physical fitness, (d) Neuro muscular coordination, (e) Skill in and knowledge of games and sports, (f) personal traits (obedience, discipline, courage, devotion, self-control, self-reliance, tolerance, unselfishness, fairplay, sincerity, adjustment, perseverance, co-operation and team spirit), (g) Integrated and balanced personality capable of serving societies and the nation in all spheres of life.

### 3. Revised Syllabus in Physical Education :

Existing syllabus has been rearranged in three groups, namely (a) Core (b) Elective and (c) Voluntary.

Names of various disciplines of Physical Education in different groups are given below including the number of periods to be allotted for each item out of 60 periods available for the whole year, leaving 10 periods for social service and school performance.

#### Group—A—Core activities.

(for Classes VI-X to be examined)

- I Formal activity :** (a) Callisthenics...12 periods (15 exercise tables with 2 minor games in each table)
- (b) Drill and Marching...6 periods  
(All movements at the halt and on the march—saluting—Inspection—cermonial parade)
- (c) Yogic Asanas (18 Asanas) 2 periods

#### II Individual activity :

- (a) Gymnastics (Floor ...8 periods) 21 stunts and 10 pyramids)

- (b) Athletics ...8 periods (Sprints (50m, 100m, 200m)—Long Jump—High—Jump Putting the shot—Throwing the Cricket Ball—Relay Race—Hopping—Skipping)

**III Activities promoting : National Ideals and citizenship**  
2 periods

National and community songs (six) — National Festivals (Two) — National Anthem — National Flag — National Emblem — Activities conducive to good health habits and citizenship).

**IV Outdoor activity :**

(a) **Camping**—"Oneday camp" (6 am - 5 pm) with full programme for all students in different groups should be organised and conducted within the school premises during the month of December and January on any Sunday or holiday. Students should keep diaries.

(b) **Excursion** —If funds do not permit, one educational excursion or outing in a nearby place should be arranged for all students in different groups. Diaries should be maintained by students,

**V Daily Assembly :**

In addition to the above activities, "Daily Assembly" involving all teachers and students should be introduced in every school compulsorily for 10 minutes before the start of classes in the school compound or in any convenient place if open space is not available.

The following programme may be followed :—

- |  |               |
|--|---------------|
| (a) Assembly of students and teachers<br>(Housewise)   | ... 1½ minute |
| (b) Observance of silence  | ... ½ "       |
| (c) Prayer song (any song excepting<br>National Anthem)  | ... 1 "       |
| (d) Three or four Free-hand exercises  | ... 3 "       |
| (e) Announcement of important daily<br>news by a student (Housewise)                           | ... 1½ "      |
| (f) Instruction to students by H. M.<br>or A. H. M.  | ... 1 "       |
| (g) Orderly dispersal in files to respective classes<br>following the class teacher or captain | ... 1½ "      |

**Group B—Elective activities :—** 6 6 ... 12 periods

Any two activities of which one should be a team game should be chosen by the school according to available facilities from the following list of activities (For Classes VI—X—to be examined)

**Team Games—**(i) Football (ii) Hockey (iii) Cricket  
(iv) Volley Ball (v) Kabaddi (vi) Basket Ball  
(vii) Kho—Kho (viii) Hand Ball

- (ix) **Gymnastics—Boys—Parallel Bar :** Horizontal Bar,  
Vaulting Horse  
Girls—Balance Beam,  
Vaulting Box,

- (x) **Athletics—Boys** Run (400m. 800m), Triple Jump,  
Pole Vault, Throw (Discus, Javelin)  
Girls—Run (400 m, 800 m, Throw  
(Discus, Javelin)



(xi) **Swimming**—Four Strokes—Crawl, Back, Breast, Butterfly,

(xii) **Rhythmics**—Bratachari / Folk Dance and Action Song.

(xiii) **Defensive activity**—Lathi and Judo.

**Group C—Voluntary activities** (Not for all boys & Girls ; only for selected boys and girls—not to be examined.)

Any number of activities from the left-out items under the elective group and the following list of items may be introduced in the school according to available facilities and may be practised outside school hours. No time should be allotted during school hours.

**(I) Formal activity :**

(a) Light apparatus drill—Dumbbell wand, Indian Club.

b) Surya Namaskar, Sit-up, Dund (B), Baithak (B)

(c) Any number of asanas outside those in the core group,

**(II) Team Games :**

(a) Badminton, Tenikoit, Table Tennis, throw Ball, Soft Ball.

**(III) Athletics :**

Boys—Hurdles, 1500 Run, 3000 m, 5000 m, Hammer Throw.

Girls—Hurdles, 1500 m, Run,



- (IV) **Gymnastics**—Boys—Ring, Pomelled Horse  
—Girls—Uneven Parallel Bar.
- (V) **Aquatics**—Diving, Water Polo (B)
- (VI) **Defensive activity** - Wrestling (B)
- (VII) **Rhythmics**—International Folk Dance, Lezium,
- (VIII) **Outdoor activity**—Hiking, Mnuntaineering, Trekking,  
Scouting (B) Girl Guides (G)

**The award of marks should be as follows :—**

Physical Education : 30

(a) Core items -(one group and one individual)

$$8 + 8 = 16$$

(b) Elective items (One Skill Test) 8

(c) Internal assessment (2 + 2 + 2) 6

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30

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(Attendance—2, Behaviour—2. Efficiency Test—2)

### **Social Service and School Performance**

Here the subjects have been rearranged in two groups only namely, Core and Voluntary.

Group—A—Core subjects (Compulsory for all boys and girls of classes VI—X—To be examined)

(I) **Social Service**—First aid and Hygiene / 6 periods

(II) **School Performance**—Drama, / Debate, / Recitation /  
and music. School cleaning and School decoration  
... 4 periods

**Group—B—Voluntary Subjects** (Not to be examined)  
Schools may take up any other subjects from the  
following list if they like.

(I) **Social Service** - Nursing Unit, Teach the unlettered,  
observance Day—Hero Day etc.

- (II) School Performance—School / Wall Magazine, Making of charts, models and Relief map, Scrap Book.

The award of marks should be as follows—

Social Service and School Performance	—20
Core items—(a) Social Service	—12
(Diary—6 and Oral—6)	
(b) School Performance	8
(Diary—4 and Oral—4)	

Two periods of 40 minutes duration each per class per week should be allotted in the general Time-Table for Physical Education, social service and school performance as directed by the Board.

#### **(4) Learning outcome of different activities :—**

##### **(A) Callisthenics :**

- (i) Contributes to the growth and development of the body.
- (ii) Develops coordination of body movements and maintains body control, body suppleness, good posture and graceful carriage of the body.
- (iii) Strengthens different limbs of the body.

##### **(B) Drill and Marching :**

- (i) Develops sense of discipline and orderliness ; a disciplined pupil is obedient, punctual, hard-working and truthful.
- (ii) Brings about the coordination between body and mind.
- (iii) Secures the attention of students by demanding Silence, precise controlled movements and finally readiness to obey orders promptly.

- (iv) Develops mental qualities e, g power of attentiveness, judgement, self-control etc.
- (v) Infuses confidence, initiative and self-reliance
- (vi) Develops collective morale and esprit-de-corps
- (vii) Forms a habit of maintaining good posture and Develops smart appearance,

**(C) Yogic Asanas :**

- (i) They claim to have physical, mental and spiritual values.
- (ii) They play an important role in prevention of diseases and maintenance of health.
- (iii) Their practice develops ability to concentrate.
- (vi) They have healthy influence upon various system of the body e. g, respiratory, circulatory, digestive, excretory, nervous and endocrine.
- (v) Asanas have also posture training value.

**(D) Gymnastics :**

- (i) Develops body control neuromuscular coardination, body suppleness and balance.
- (ii) Develops strength, motor ability and skill, alertness, agility and quick reaction, courage, presence of mind etc.
- (iii) Gymnastically fit body helps to participate in all games and sports skilfully and efficiently.

**(E) Athletics :**

- (i) Contributes to all-round physical fitness and helps to develop speed, agility, strength and endurance.



- (ii) Develops fundamentals of motor skill.
- (iii) Helps to develop sportsman spirit i. e. sense of fair play, impartial judgement, unselfishness and cooperation.

**(F) Swimming :**

- (i) Develops courage and removes fear of water.
- (ii) Involves movement of all big muscles
- (iii) Increases self-confidence and helps to save others from drowning,
- (iv) Gives fun and pleasure.

**(G) Team Games (Major) :**

- (i) Develop neuro-muscular coordination, endurance and ability to participate in vigorous activities.
- (ii) Games involve movement of big muscles through running, jumping, throwing, hitting and hence, are not only vigorous but also interesting and enjoyable.
- (iii) Major Games satisfy the needs for team games and sublimate the fighting instinct through competitive games.
- (iv) Learning of skill and their improvement are developed
- (v) Develop mental and moral qualities. e. g obedience, loyalty, fairplay, judgement, ready wit, quick reaction, and sportsman spirit.

**(H) Recreational Games ( Minor ) :**

- (i) Develop natural basic skills like running, throwing, catching, hopping and dodging.
- (ii) Develop ability to control a ball and provide fun and pleasure.



**(I) Defensive activities :**

- (i) Help the student to assess his/her own strength
- (ii) Develop courage, self-confidence, presence of mind, quick reaction and self defence.
- (iii) Strengthen all muscles of the body and make the internal organs fit.

**(J) Rhythmic activities :**

- (i) They have great physiological value and gives considerable exercise of the body to the participants.
- (ii) Develop balance and graceful movements, flexibility, agility, body poise, sense of rhythm and fitness of the body.
- (iii) These activities are less rigid, self expressive, creative and full of joy.

**(K) Outdoor activities :**

Develop correlationship, sense of living together irrespective of caste and creed, sense of unity, spirit of social service, cooperation, initiative, leadership punctuality. self-help, friendly attitude and unselfishness.

**(L) Activities promoting National Ideals and Citizenship :**

- (i) Develop patriotism and love for the country and the humanity.
- (ii) Develop good health, habits and citizenship.

**(M) Daily Assembly :**

- (i) Develops sense of discipline including punctuality and obedience.
- (ii) Helps to Develop spirit of brotherhood, corporate action and integrity.

**(5) How to implement the programme :—**

While implementing the programme a number of problems have to be faced. Facilities in terms of leadership (qualified teacher), play ground, gymnasium, equipment etc. will have to be acquired, if not already available, in a planned and phased manner.

**(a) Leadership :**

(i) Qualified teachers :—Whole time physical education teachers having degree or diploma in Phy. Edn. are not available for all Secondary Schools of the State at the present moment. About 4,000 Schools are still going without fully qualified teachers. To fill in the gap with partially trained teachers, the Board has already taken some bold action by organising 'In-Servic Teachers. Training Courses in Physical Education of three months' duration at three different Centres of the State at Malda, Amarkanān (Bankura) and Banipur (For Women)

It is obligatory on the part of every school to have one qualified teacher of Physical education for taking Physical education classes. Circulars have been issued to all Secondary schools asking them to depute one suitable teacher to any of the 3 Centres to receive necessary training in Physical education so that Physical education classes can be taken by them after completion of the course as a stop-gap arrangement till fully qualified teachers are available. When the diploma holder P. E. teacher will be appointed, these Short Course trained teachers will continue to assist them.

**(ii) Student Leaders :**

It is not possible for a single teacher to teach different activities, supervise different games and organise competitions.

A few efficient students may be picked up and oriented so that their services can be utilised for successful implementation of the Physical education programme. Leadership certificates may be issued to these student-leaders as incentive.

**(b) Play ground :**

Whatever space is available in the school must be utilised for conducting physical education activities. An open space of 60'x30' may serve the purpose.

In Calcutta, Schools having no space may take advantage of nearby public parks, open play grounds, vacant lands and open roof of the school building, with railing.

**(c) Gymnasium :**

A gymnasium should be provided wherever possible. Any hall or big room may be used for teaching activities not requiring open space.

**(d) Equipment :**

The proposed core programme comprises items of different activities which require a few or no equipment for its successful implementation. But the school should provide playing materials necessary for certain activities. These can be purchased from the game fund to be created separately with games fee realised from the students and Govt. education grant, if received. Improvised or low cost equipment may also be used if funds do not permit the purchase of standard and quality materials.

A school at present may purchase minimum equipment and other teaching aids required for those activities only which are selected for inclusion in the physical education programme.

A list of equipment required for activities suggested for inclusion in the School programme on compulsory basis is given below.



**(A) Games accessories :**

- (i) **Football** :—Ball, goalposts with cross bars, goal net, Syringe, Lacingawl, Pusher, extra Bladder & Rubber solution.
- (ii) **Volley Ball & Throw Ball** :—Balls, posts and nets.
- (iii) **Hand Ball** :—Ball & posts.
- (iv) **Tenikoit** :—Ring, Posts & nets.
- (v) **Badminton** :—Rackets, shuttles, posts & Net.
- (vi) **Kho-Kho** :— Posts,

**(B) Athletic implements :**

- (i) **Run** —Starter's Pistol, Whistles, Flags ( Red & White ) Stop watches, Finishing Posts, Relay Batons, Victory Stand.
- (ii) **Long & Triple Jump** : Take off Board, Jumping pit with sand, Measuring Tape.
- (iii) **High Jump** : Uprights with support for cross Bar, Cross Bars, or soft rope with weights at ends, Measuring Tape, jumping pit with sand.
- (iv) **Putting the Shots** : Shots ( Brass or Iron ) 16 lbs for men, 12 lbs for Boys and 4 K. G. for women, Stop Board, Measuring Tape.

**(C) Gymnastic apparatuses :**

- (i) **Floor exercises** :—Mattress ( 6'x4'x6" ) two in numbers.
- (ii) **Parallel Bar** :—Portable and adjustable ( for boys only)
- (iii) **Horizontal Bar** : - Adjustable ( for boys only )
- (iv) **Balance Beam** :—( for girls only )



**(D) Common accessories for different activities :**

Siop Watches, Measuring Tapes, Whistles, Flags ( Red & White ) Long rope and wire. Big nails, First aid Box, Bandage.

**(E) Books and Charts :**

- (i) Rules of Games and Sports
- (ii) First aid to the injured,
- (ii) Charts on Anatomy, Physiology and First Aid.

**(F) Miscellaneous articles :**

Skippping Ropes, Wooden Dumb bells, Lezium, Rubber Balls, Satranchi or ground Sheet, Small sticks for Kathi Nritya, Harmonium. Dholak, Big Drum and Kettle Drums

**(G) Improvised equipment :**

It may be possible for all Schools to provide Standard equipments for all activities. A resourceful teacher may think of improvising certain equipment for teaching skills: Few examples are given below.

- (i) A pair of bamboo poles may be used as goal posts and a piece of split bamboo as cross bar for football and Hand Ball.
- (ii) Bamboo may be used as posts for fixing net in case of Volley Ball, Throw Ball, Badminton and Tenikoit.
- (iii) A thick rope may substitute the net for playing Tenikoit and Throw Ball.
- (iv) Two thick bamboo posts may be used as uprights for High jump by fixing nails on them one inch apart starting from 3' from ground and fixing them on the ground 12' apart.
- (v) Mattress may be prepared with Straw with gunny covering.

### (6) Evaluation of pupils in Physical Education :—

(a) Physical Education is an integral part of School education for pupils of all classes. Furthermore its place in the School curriculum has been changed from a mere curricular activity to a full fledged subject. Hence, evaluation of the pupils' progress in the area of physical education is indispensable.

Tests in Physical education are essential to evaluate the effectiveness of Phy. education programmes. A clear realisation of the objectives of the programme and familiarity with suitable testing procedures are essential for making tests and determining results.

### (b) Principles of evaluation :

- (i) The calculation of Physical Education programme is based on the objectives of the curriculum.
- (ii) The process of evaluation of pupils' progress is continuous and comprehensive.
- iii) The evaluation is based on the day to day observation by the teacher during the process of learning through tests of knowledge and skill.

### (7) Conclusion :

The curriculum is merely a means to an end and the teacher of physical education should not be a slave to it, but should be guided by the desire to do his best by adjusting it to the actual condition of work in his school.

Implementaion of the curriculum in Physical education requires a cooperative effort of the teachers, headmasters, management and guardians.

### Classwise Syllabus in Physical Education.

Group A—Core activities-Compulsory for all students.

## CLASS—VI

**1. Callisthenics :**

Four exercise tables consisting of six to eight exercises in each may be arranged in a sequence—Rhythmic jumps, Head & Neck, Arms & shoulder, Trunk bending & twlusting, Leg & balance, agility exercise, minor games and final breathing exercise.

**2 Drill and Marching :**

Savdhan, Vishram, Aram se. Jaise the, Line Ban, Dahine saj, Samne Dekh, Gintikar, Tartib Ho, Saj Ja, Kadam Tal, Dahine Mur, Baen Mur, Tej Chal, Tham, Line Tor, Visharjan.

**3. Yogic Asana :**

Padmasana, Vajrasana, Supto Vajrasana, Ardha Kurmasana. Sabasana for a few seconds after each Asana.

**4. Gymnastics (Floor) :**

Arching, Forward Roll, Backward Roll, Rocking in pairs, Forward Roll in pairs, Backward Roll in pairs, Pyramid-Two figures,

**5. Athletics :**

Warming up exercise, Hopping, Skipping, Sprints ( 50m & 100m )-Fundamental running actions, standing long jump. Cricket ball throw-Approach run, Release, follow through.

**6. Activities Promoting National Ideals :**

National Song and one Partriotic Song. Celebration of two National Festivals with all students of the schoool, National Anthem Its meaning and historical background. National Flag-History and its importance.



**7. Camping and Excursion :**

One "One-day" Camp ( 6 a. m. 5 p. m. ) with full programme and one Educational Excursion may be arranged on any Sunday or holiday every year.

**8. Daily Assembly :**

Should be held every day for 10 minutes with all students and teachers of the school before the start of the classes according to programme given in the main syllabus.

**CLASS VII****1. Callisthenics :**

Revision of previous class work. Four more exercise tables with 2 minor games in each table. Same sequence as in previous lesson may be kept:

**2. Drill and Marching :**

Revision of previous class work. Pichhe Mur Adha Dahine/ Baen Mur, Samne Siloot, Ekline Ban, Do/Tin Line Ban, Dhire Chal, Dhire Chalmen Kadam Tal, Daur Ke chal, Daur Chalmen Tham, Tet Kadam Tal se Age Barh, Daur Chalmen Kadam Tal.

**3. Yogic Asana :**

Repeat the previous class work. Bhujangasana, Salavasana, Dhanurasana, Paschimottanasana. Savasana should be practised for a few seconds after each Asana.

**4. Gymnastics (Floor) :**

Repeat the previous class work, Frog balance, Leap Frog over partner, Wheel barrow, Dive Roll, Hand Spring in progression, Pyramid-Two new figures.



**5. Athletics :**

Revision of previous work, Warming up exercise, Sprints (50 m & 100 m)—Technique of Start and Finish. Long Jump - Approach run. Take off, Mid - air action, Landing. High Jump - Approach run, Take off, Crossing the bar (Lay out), Landing.

**6. Activities Promoting National Ideals :**

Repeat previous work. National Song and one new Patriotic Song. Celebration of two National Festivals with all students. National Anthem—Singing of the short version and period of singing (practical). National Flag—Description, Size, How to fly.

**7. Camping and Excursion :**

One Camping and one Excursion with all students of the school in groups should be arranged.

**8. Daily Assembly :**

Should be held with all students of the school for 10 minutes every day as per programme,

**CLASS VIII****(1) Callisthenics :**

Revision of previous class work. Three more exercise tables with 2 minor games in each table. Same sequence may be kept.

**(2) Drill and Marching :**

Repeat the previous work. Tej Chalmen Dahine Mur, Tej chalmen Baen Mur, Tej chalmen Pichhe Mur, Chhota

Kadam Lamba kadam Kadam Badal, Khule line / Nikat line Chal, Age chal / Pichhe chal, Dokadam Dahine / Baen Chal.

**(3) Yogic Asana :**

Repeat the previous work. Ardha Chandrasana, Pada-hastasana, Ardha Mastyendrasana, Gomukhasana, Sabasana after each Asana.

**(4) Gymnastics (Floor) :**

Repeat the previous work, Handstand, Cartwheel, Hand spring, Backward somersault in pairs, Pyramid —Any two new figures.

**(5) Athletics :**

Revision of previous work. Warming up exercises, Sprint (100m) —Fixing of Starting Blocks, Getting off the Blocks, Stride length, Body position, Finish. High Jump Technique of Straddle style. Putting the shot—(with light weights, 4 lbs, 6 lbs 8 lbs). Hold, Initial stance glide. Delivery, Reverse.

**(6) Activities promoting National Ideals :**

Keep practice of previous work, National Anthem—Singing of long version and the Period of singing, when to play, when to sing. National Emblem—Meaning and Significance. National Flag—when to fly.

**(7) Camping and Excursion—**one camping and one excursion in a year.

**(8) Daily Assembly—**should be held with the students as per programme.

## CLASS IX

**(1) Callisthenics :**

Revision of previous work. Two more exercise tables with 2 minor games in each table.

**(2) Drill and Marching :**

Repeat the previous work. Dahine aur Baen Ghoom, Tin Tin Men Tejchal (Dahine / Baen Se) Dahine Dekh, Baen Dekh, Dahine Siloot-Siloot, Baen Siloot-Siloot, Samne Siloot-Siloot, Officer Ko Patrika Dena aur Inam Lena, Dahine aur Baen Disha Badal.

**(3) Yogic Asana :**

Repeat the previous work. Sarbangasana, Halasana, Chakrasana, Yogo Mudra. Sabasana for a few seconds after each Asana.

**(4) Gymnastics (floor) :**

Repeat previous work. Head Spring, Hand Stand over Partner, Handstand followed by a roll, Backward roll to Hand Stand. Pyramid—Two new figures.

**(5) Athletics :**

Keep practice of previous work. Warming up exercise, Run (200 M)—Same as 100 M sprint. Learn to fix up Block and get off the Blocks during staggered start. Putting the Shot—Practise with standard weight Boys—12 lbs., Girls—4 Kgs. Relay Race—Practise Baton Changing in Relay Zones.



**6. Activities promoting National Ideals :**

Keep practice of previous work. National Flag—(Practical Projects)

- (a) Procedure regarding hoisting, unfurling of the Flag and Salutation.
- (b) Procedure regarding Lowering
- (c) Precautions to be taken for its correct use.

**7. Camping and Excursion :**

One Camping and one Excursion with all students in groups should be arranged.

**8. Daily Assembly :**

All students should assemble Class - wise and in different Houses with Class teachers and follow the programme.

**CLASS X**

**1. Callisthenies :**

Revision of previous work. Two more new exercise tables with 2 minor games in each table.

**2. Drill and Marching :**

Repeat the previous work, Route March, Leadership Training in Ceremonial Parade.

**3. Yogic Asana :**

Repeat all previous work. Ushtrasana and Shirsasana. Sabasana should be practised for a few seconds after each Asana.



**4. Gymnastic (Floor) :**

Repeat all previous work. Shoulder spring and Tiger balance. Pyramid—Two new figures.

**5. Athletics :**

Repeat all previous work. Warm up exercise. Practise all items of the whole course repeatedly with proper style. Relay Race ( $4 \times 100\text{M}$ )—Practise over the full course Changing the baton in relay zones properly,

**6. Activities promoting National Ideals :**

Revision of whole course and practise the items under practical project.

**7. Camping and Excursion :**

Senior and efficient students should act as leaders while running one-day Camp and going out in excursion.

**8. Daily Assembly :**

Senior students should act as House Captains and Vice Captains while attending the Daily Assembly.

**Group B—Elective activities**

**(Compulsory for all students)**

Any two activities of which should be a game may be chosen by the school according to facilities available from the following list of activities.

Both the activities should be practised in all classes from VI—X in progressive method.

### List of activities :

**Team Games**—(1) Football, (2) Cricket, (3) Hockey,  
(4) Volley Ball, (5) Basket Ball, (6) Kabaddi,  
(7) Kho—Kho, (8) Hand Ball.

(9) **Rhythmics**—Bratachari / Folk Dance and Action Song.

(10) **Athletics** - Boys—Run (400, 800 M), Throw (Discus, Javelin) Pole Vault, Triple Jump.

Girls—Run (400, 800 M), Throw (Discus, Javelin)

(11) **Gymnastics** Boys—Vaulting Horse, Parallel Bar, Horizontal Bar, Girls—Vaulting Box, Balance Beam.

(12) **Swimming**—Four Strokes—Crawl, Back, Breast, Butterfly.

(13) **Defensive activity** :— Lathi and Jodo.

The revised syllabi should be introduced from January, 1982, in Classes VI to IX for the Madhyamik Pariksha (Secondary Examination), 1984 onwards.

### Class-wise syllabus in Social Service and school Performance.

**Group A—Core subjects (Compulsory for all students)**

#### CLASS VI

#### Personal Hygiene

- (a) Cleanliness—Skin ( body ), hair, nails, teeth, nose, fingers eyes, clothes and footwear,
- (b) Sleep—Rest of the body and mind, clean bedding ventilation and fresh air.

- (c) Food and drink-Carefully selected (a cupful of green daily) and properly cooked food and how to eat, boiled or filtered water should be taken.
- (d) Activities promoting good and healthy habits.
- (e) Avoidance of bad habits like spitting, blowing nose without handkerchief sneezing, throwing fruit skins in public places.

## CLASS VII

### Sanitation and Community hygiene :

- (a) Fundamental rules of sanitation should be taught to the pupils so that they may be able to play their part well in the maintenance of public hygiene.
- (b) Pupils should be imparted instruction in the following items for maintaining good sanitation of their respective areas.
  - (i) Purification of drinking water-By boiling, by filtration and by use of chemicals and chlorine.
  - (ii) Destruction of household pests like mosquitos, flies etc.
  - (iii) Sanitary arrangement-Latrines, Urinals and soakage pits.
  - (iv) Disposal of Solid refuse and wastage-by burial or burning.

## CLASSES VIII, IX & X

### First aid ( Practical )

- (a) Basic requirements and requirement of first aid.
- (b) Triangular bandage.
- (c) Stopping of bleeding.
- (d) Tourniquet.
- (e) Treatment of Cuts and bruises.
- (f) Slings
- (g) Carriage of sick and injured.

### Syllabus in School Performance

#### Group A—Core Subjects (Compulsory for all students)

## CLASSES VI & X

- (a) Drama, /Debate/Recitation/and Music ( Vocal | Instrumental ). Any one item according to the aptitude of a student.
- (b) School cleaning and School Decoration.

## TRAFFIC EDUCATION

The followings revised Syllabus in Physical Education, Social Service including School Performance have been prescribed by the Board for those students who offer **Traffic Education** as one of the items of activities for the Madhyamik Pariksha ( SE ) 1984 and onwards :—



# 1. Core Activities : Award of marks

( as prescribed for Classes IX & X in the revised syllabus in the Physical Education introduced from January, 1982 ).  $8+8=16$  (one group and one individual)

## 2. Elective Activities :

- |   |   |   |   |
|---|---|---|---|
| (i) One of the Team Games prescribed in the revised syllabus in Physical Education. | 4 | } | 8 |
| (ii) Physical Education Activities under Traffic Education.                         | 4 |   |   |

## 3. Internal assessment on Attendance, Behaviour, Efficiency Test in respect of Physical Education Activities and Physical Education Activities under Traffic Education.

[Physical Education Activities	4	}	6
Physical Education Activities under Traffic Education.	2		

## 4. Social Service :—

(As prescribed under Traffic Education as alternative to First Aid and Hygiene prescribed in the Syllabus in Social Service ). 12 12

## 5. School Performance :—

(As prescribed in the revised Syllabus). 8 8

Total—50

## CHAPTER VIII

### ADDITIONAL SUBJECTS

#### A—level Language

##### (I) বাংলা—( অতিরিক্ত )

###### উদ্দেশ্য

বাঁশষ্ট সাহিত্যকর্মের সাহিত ছাত্রছাত্রীদের পরিচয় সাধন ।

##### নবম ও দশম শ্রেণী

একটি পত্র—পূর্ণ সংখ্যা—১০০

১।	গদ্যাংশ	২৫
২।	পদ্যাংশ	২০
৩।	নাটক	১৫
৪।	সাহিত্যের ইতিহাস	২০
৫।	রচনা	২০

মোট ১০০

পাঠ্যগ্রন্থ : ক। নিংকুতি

শরৎচন্দ্র চট্টোপাধ্যায়

খ। সপ্তয়ন

রবীন্দ্রনাথ ঠাকুর

নির্বাচিত অংশ :

নিংকুতির স্বপ্নভঙ্গ, পরশ পাথর, বৈরাগ্য, পরিচয়, দঃসময়, বর্ষামঙ্গল, ন্যায়দণ্ড ভারততীর্থ, অপমানিত, মধুময় পৃথিবীর ধূলি ।

গ। মদুকুট ( নাটক )

রবীন্দ্রনাথ ঠাকুর

ঘ। সাহিত্যের ইতিহাস ১৮০০ খ্রীঃ অঃ হইতে শরৎচন্দ্র পর্যন্ত ।

পাঠ্যবিষয় :

- ১। বাংলা গদ্যের অন্তর্গত—মুদ্রোপীয়া মিশনারি ও বাংলা গদ্য, ফোর্ট উইলিয়ম কলেজ, রামমোহন রায়, ঈশ্বরচন্দ্র বিদ্যাসাগর, অক্ষয়কুমার দত্ত, প্যারীচাঁদ মিত্র, ভূদেব মুখোপাধ্যায়, বঙ্কিমচন্দ্র চট্টোপাধ্যায়, রামেন্দ্রসুন্দর ত্রিবেদী।
- ২। নাটক ও নাট্যশালা কবি, পাঁচালী ও বাহা, নাটক রচনার সূত্রপাত, কয়েকজন নাট্যকার—মধুসূদন দত্ত, দীনবন্ধু মিত্র, গিরিশ ঘোষ ও দ্বিজেন্দ্রলাল রায়।
- ৩। উপন্যাস ও ছোটগল্প—বঙ্কিমচন্দ্র চট্টোপাধ্যায়, রমেশচন্দ্র দত্ত, প্রভাতকুমার মুখোপাধ্যায়, শরৎচন্দ্র চট্টোপাধ্যায়।
- ৪। কাব্য ও কবিতা—মধুসূদন দত্ত, হেমচন্দ্র বন্দ্যোপাধ্যায়, নবীনচন্দ্র সেন, বিহারীলাল চক্রবর্তী।
- ৫। রবীন্দ্রনাথ ঠাকুর।

## (2) ADDITIONAL ENGLISH

### CLASSES IX & X

One Paper—100 marks

1. Selected period of the History of English Literature	15 marks
2. One play or one novel ... ..	15 marks
3. A book of Selections consisting of extracts from English Prose ... ..	40 marks
4. An anthology of Verse ... ..	30 marks
	<hr/> 100 marks <hr/>

## SYLLABUS

**Text-book :**

1. A Short History of English Literature -- Ifor Evans (The English Language Book Society).

The following chapters are recommended for study.

Chapter 4—The Romantic Poets pp. 66-90	} 75 pp.
Chapter 7—Shakespeare pp. 147-162	
Chapter 14—Modern English Prose pp. 311-344	

2. St. Joan—George Bernard Shaw (Orient Longman, Paper Back Edition ).

Or

David Copperfield—Dickens ( Herbert Strang's Library, Oxford University Press ),

3. A Prelude to English—Edited by L. A. Hill (Oxford University Press ).

The following are recommended for reading :

- |                                   |                      |
|-----------------------------------|----------------------|
| 1. And then Gandhi came           | Jawaharlal Nehru     |
| 2. The Summit                     | Edmund Hillary       |
| 3. One's Habits                   | ... Robert Lynd      |
| 4. The Tigress                    | Jim Corbett          |
| 5. The Jam Sahib of Nawanagar     | A. G. Gardiner       |
| 6. What is Life ?                 | ... J. B. S. Haldane |
| 7. Principles of Good Writing     | ... L. A. Hill       |
| 8. The God who gives away<br>Land | ... Robert Trumbull  |

4. Poetry for Pleasure selected by Maung Kaung (Oxford University Press ).

The following pieces are recommended for reading :

- |                     |                                |
|---------------------|--------------------------------|
| The Pigtail         | William Makepeace<br>Thackeray |
| The Lady of Shalott | Lord Tennyson                  |



La Belle Dame Sans Merci	...	John Keats
A Passer-by	...	Robert Bridges
The World		William Wordsworth
From 'The Cloud'	...	Percy Bysshe Shelley
I Vow to Thee, My Country		Sir Cecil Spring.Rice
Dream-Pedlary		Thomas Lovell Beddoes
Fame and Friendship	...	Henery Austin Dobson
Uphill	...	Christina Georgina Rossetti
Fear No More	...	William Shakespeare
Virtue	...	George Herbert
Time, You Old Gipsy Man	...	Ralph Hodgson
Ozymandias	...	Perey Bysshe Shelly
In time of 'the Breaking of Nations'	...	Thomas Hardy
Heraclitus	...	William Johnson Cory
Joy and Woe are Woven Fine	...	William Blake

## ३—विशिष्ट दिन्दी

## —नवम् और दशम् श्रेणी—

## अंको का विभाजन

गद्य	...	३०
पद्य	....	३०
निबन्ध-लेखन	....	२०
लघु उपन्यास अथवा नाटक	...	२०

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 १००

यह प्रश्न पत्र साहित्य विशिष्ट और गहन अध्ययन की दृष्टि से प्रस्तावित है। इसमें विद्यार्थियों से यह अपेक्षा की जाती है कि वे साहित्यिक

प्रतिभा को विकसित करने के साथ-साथ अपनी साहित्यिक चेतना उद्बुद्ध कर, जिससे आगे के महाविद्यालयीन शैक्षणिक और साहित्यिक स्वर की दृढ़ भूमिका प्रस्तुत हो सके ।

१९७६ की माध्यमिक परीक्षा के लिए निर्धारित ग्रंथ एवं अध्येतव्य पाठ :—

१—गद्य

(i) गद्य—भारती :—[ राष्ट्रीय शैक्षणिक अनुसंधान और प्रशिक्षण (तृतीय भाग) परिषद्, नई दिल्ली, द्वारा प्रकाशित ]

अध्येतव्य पाठ :—

१—कवीर साहब से भेंट	:	रामधारी सिंह दिनकर
२—महमानव	:	रामविलास शर्मा
३—विज्ञापन-युग	:	मोहन राकेश
४—लोभ और प्रीति	:	रामचन्द्र शुक्ल
५—परम्परा बनाम आधुनिकता	:	हजारीप्रसाद द्विवेदी
६—भाग्य और परूपार्थ	:	जैनेन्द्र कुमार

२ पद्य :—

(ii) काव्य-भारती :—[ राष्ट्रीय शैक्षणिक अनुसंधान और प्रशिक्षण (तृतीय भाग) परिषद्, नई दिल्ली, द्वारा प्रकाशित ]

अध्येतव्य पाठ :—

१—सन्ध्या-सुन्दरी	:	सूर्यकान्त त्रिपाठी 'निराला'
२—जवानी	:	माखनलाल चतुर्वेदी
३—नवप्रकाश बन आओ	:	सुमित्रानन्दन पन्त
४—थके हुए कलाकार से	:	धर्मवीर भारती
५—श्रद्धा का सौन्दर्य	:	जयशंकर प्रसाद
६—तुम मुझ में प्रिय	:	महादेवी वर्मा

(iii) निबन्ध-लेखन—अध्यापक सुविधानुसार इस वर्षे उचित और उपयुक्त ग्रन्थों का चुनाव कर लें ।

(iv) लघु उपन्यास अथवा नाटक ग्रन्थ :—

‘निर्मला’ —प्रेमचन्द ; अथवा ‘राक्षसी’—प्रसाद  
(उपन्यास) (नाटक)

#### (4) ADDITIONAL NEPALI

##### CLASSES IX & X

One Paper : full marks—100

##### Distribution of Marks :

(1) Prose	...	...	25
(2) Verse	...	...	20
(3) Drama	...	...	15
(4) History of Nepali Literature	...	...	20
(5) Essay	...	...	20
			<hr/> 100

##### Text-books :

(1) Jiban Parikrama (Prose)	...	by Krishna Singh Mokta
(2) Aansoo Verse)	...	by Agam Singh Giri
(3) Kamal (Drama)	...	by T. B. Chettri
or		
Kisan (Drama)	...	by Bhimnidhi Tiwari

History of Nepali Literature with reference to the following authors and topics :—

## Topics

**Katha :**

Guru Prasad Mainali, Hridaya Chandra Singh, Gothaley,  
Visheshwar Prasad Koirala, Shiva Kumar Rai, Pushkar Shamser  
Rupnarayan Singh.

**Kavita :**

Bhanu Bhakta, Raghunath Moti Ram, Lekhnath, Laxmi  
Prasad Devkota. Siddhicharan, Dharanidhar, Parasmani  
Pradhan, Agam Singh Giri, Narendra Kumai.

**Upanyas .**

Rudra Raj Pandey, Shiva Pratap Thapa, Rupanarayan  
Singh, Shiva Kumar Rai, Indra Sundas, Accha Rai.

**Natak ;**

Balkrishna Sam, Bimnidhi Tiwari, Hridaya Chandra Singh.

**(5) ADDITIONAL URDU****Distribution of Marks :**

	Page No.
Prose	40
Poetry	30
Grammar and Composition	10
Essay	20
	<hr/>
	100



The following book is recommended—

Intekhab by Syed Mahmud.

### CLASS IX

Pieces to be read :

	Prose	Page No.
1. Apni madad ap—Sir Syed	...	5—15
2. Karkhana-i-Qudrat—Nazir Ahmed	...	54—58
3. Ghibat—Shibli	...	75—77
4. Hasad aur Rashk—Shibli	...	80—85

### Poetry

1. Gul—Dr. Iqbal	...	172
2. Jugnu—Dr. Iqbal	...	173
3. Maal-i-Zindigi—Dard	...	177
4. Marsia-i-Ghalib—Hali	...	183—184
5. Nairangi ye-Alam—Anis	...	186—187
6. Mehnat se ji Churana—Akbar	...	188
7. Taziye Awqat—Akbar	...	189—190
8. Rubaiyat—Dabir, Zauq, Hali	...	206

### CLASS X

The following book is recommended :—

Intekhab by Syed Mahmud.

Pieces to be read :

	Prose	
1. Shairi Ki Haqiqat—Shibli	...	103—108
2. Sir Syed Ke Akhlaq—Hali	...	112—118

	<i>Page No.</i>
3. Sach aur Jhot Ka Razm Namah—Sharar ...	118—125
4. Kifayet Sheari—Sajjad Mirza ...	134—138

### Poetry

1. Garmi -- Anis ... ..	167—169
2. Lutf-i-Bahar—Mubarak ... ..	169—170
3. Abri i-Kohsar—Dr. Iqbal ... ..	171—172
4. Nishan-i-Iqbalmandi—Hali ... ..	190—192
5. Nang-i-Khidmat—Hali ... ..	197—198
6. Pardah—Akbar ... ..	199
7. Rubaiyat—Anis ... ..	205

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## B—Level Languages

(১) বাংলা 'খ' (অতিরিক্ত)

নবম ও দশম শ্রেণী

একটি পত্র—পূর্ণ সংখ্যা—১০০

১। গদ্যাংশ	২৫
২। পদ্যাংশ	২০
৩। সহায়ক পাঠ	১৫
৪। ব্যাকরণ	১৫
৫। বিষয়-বোধ (Comprehension), ভাবসংপ্রসারণ/পত্ররচনা রচনা	১০ ১৫
	<hr/> মোট ১০০

## ১। অনুমোদিত পাঠ্যগ্রন্থ

পাঠমালিকা (১ম ভাগ) : পশ্চিমবঙ্গ মধ্যশিক্ষা পর্ষদ।

নির্বাচিত অংশ

নবম শ্রেণী

গদ্যাংশ

(ক) কুঠার ও জলদেবতা	ঈশ্বরচন্দ্র বিদ্যাসাগর
(খ) রাধারাণী	বঙ্কিমচন্দ্র চট্টোপাধ্যায়
(গ) দিন-দুপুরে	লীলা মজুমদার

পদ্যাংশ

(ক) কাঙালিনী	রবীন্দ্রনাথ ঠাকুর
(খ) ছেলের দল	সত্যেন্দ্রনাথ দত্ত
(গ) অশ্বিন মাঝি	কুমুদরঞ্জন মল্লিক

দশম শ্রেণী

গদ্যাংশ

(ক) ছেলেবেলা	রবীন্দ্রনাথ ঠাকুর
(খ) রামের স্মৃতি	শরৎচন্দ্র চট্টোপাধ্যায়
(গ) অপদ্র পাঠশালা	বিভূতিভূষণ বন্দ্যোপাধ্যায়

পদ্যাংশ

(ক) আমার জন্মভূমি	দ্বিজেন্দ্রলাল রায়
(খ) নকল গড়	রবীন্দ্রনাথ ঠাকুর
(গ) থেয়া ডিঙি	যতীন্দ্রমোহন বাগচী

২। সহায়ক পাঠ

মুকুট

রবীন্দ্রনাথ ঠাকুর

৩। ব্যাকরণ

নবম ও দশম শ্রেণী

১। পদ পরিচয় ২। লিঙ্গ ৩। বচন ৪। কারক ৫। সরল  
সন্ধি ৬। সরল সমাস ৭। সাধু ও চলিত ভাষা।

(2) ADDITIONAL SANSKRIT

CLASSES IX & X

Madhyamik Pariksha (Secondary Examination) 1981 onwards

One Paper—100 Marks

Distribution of Marks

1. Text—55 marks as detailed below

(i) Short questions requiring a detailed study of the prescribed piece (to be answered in Sanskrit / English / Major Vernacular)

... 16



(ii)	Translation from Sanskrit into Major Vernacular / English	...	15
(iii)	Explanations in Sanskrit / Major Vernacular/ English	...	10
(iv)	Grammatical questions from Prose Text...		10
(v)	Memory work from Sukti Ratnabali ( সন্ধি রত্নাবলী )	...	4
2.	Grammar (outside the text )	...	20
3.	Translation from English / Major Vernacular into Sanskrit	...	15
4.	Paragraph writing in Sanskrit (about 80 words)		
	OR		
	Comprehension Test in Sanskrit from an unseen passage (Standard Class VIII)	...	10
			<hr/>
		Total marks—	100

### সংস্কৃত সাহিত্য সংগ্রহ

#### Pieces to be read

#### CLASS IX

Prose :—কুম্ভহংসদ্বয়কথা, কলহাপ্রয়াখ্যানম্, সিংহশৃগালশিশুকথা ।

Poetry :—শিবিকথা, সন্ধি রত্নাবলী ( Verses 1 - 20).

#### CLASS X

Prose : পঞ্চতন্ত্রকথামুখম্, উপন্যাসকথা, দ্বিজভোজরাজসংবাদঃ

Poetry :—অজর্জুনবিবাদঃ, বিদুরস্য স্তুতিষিখিতানি ( Verses 1 - 15 )  
পাদকাগ্রহণম্ ।

## Grammar

(Question on Sutras will not be insisted on)

1. General rules of **Sandhi** including **Sandhi-Nisedha** to be covered in detail : uncommon and irregular forms may be omitted.
2. Declension—All the common declensions of nouns, pronouns and Numerals.
3. Major and familiar indeclinables.
4. An elementary knowledge of গণ্ডবিধান and ষষ্ঠবিধান ।
5. Conjugation লট্, লোট্, লঙ্, বিধিলিঙ্ and লৃট্ of only the familiar and important roots in the ভবাদি, তুদাদি, দিবাদি, চুরাদি classes and of the following roots :

অদাদি : যা, জাগ্, শাস্, অস্, হন্, বিদ্, আস্, শী, দ্ধহ, র্দ্দ ।

হ্বাদি : ভী, দা ।

স্বাদি : আপ্, শক্, শ্ৰু ।

রুদাদি : তুজ্, ছিদ্, মৃজ্ ।

তনাদি : কৃ ।

ঞাদি : ঞ্জী, জ্ঞা, গ্রহ্ ।

লিট্—Some common forms of roots like the following :

গম্, দৃশ্, যা, ভূ, গ্রহ্, বচ, চিন্ত্ ।

6. কৃৎ suffixes : A general idea of the important suffixes like the following :

Satr ( শত্ ), Sanac ( শানচ্ ), kta ( ক্ত ), ktavatu ( ক্তবতু ), ktva ( ক্ত্বা ), lyap ( ল্যাপ্ ), tumun ( তুমন্ ), ktin ( ক্তিন্ ), lyut ( ল্যুট্ ), an ( অন ), nini ( নিনি ), tr ( ত্ ), ac ( অচ্ ), khac ( খচ্ ), kvip ( ক্টিপ ), tavya ( তব্য ), aniya ( অনীয় ), nyat ( ন্যৎ ), yat ( যৎ ), kyap ( ক্যাপ্ ) .

7. Secondary ( তর্জিত ) suffixes :—A general idea of the following suffixes :  
 tarap ( তরপ্ ), tamap ( তমপ্ ), iyasun ( ঈয়সুন ), isthan ( ইষ্ঠন্ ), an ( অন্ ), in ( ইঞ্ ), tal ( তল্ ), imanic ( ইমনিচ্ ), matup ( মতুপ্ ), mayat ( ময়ট্ ), vin ( বিন্ ), ini ( ইনি ), vati ( বতি ), tva ( ত্ব ), cvi ( চি ),
8. A general idea about genders with special reference to formation of feminine forms by the addition of স্ত্রী প্রত্যয়—specially—tap and nip ( টাপ্, ঙীপ্ )
9. সনন্ত (resulting forms only)
10. গিজন্ত verb (common forms only)
11. নাম ধাতু (only the resulting forms and distinction between cognate forms)
12. পরস্মৈপদ and আত্মনেপদ বিধান : use of the following verbs only :  
 kr ( ক্ ), ji ( জি ), da ( দা ), pracch ( প্রচ্ছ ), stha ( স্থা ), hve ( হ্বে ), han ( হন্ ), jna ( জ্ঞা ), car ( চর্ ), bhuj ( ভুজ ), vad ( বদ্ ), ni ( নী ), ram ( রন্ )
13. Change of voice—in general, including that of দ্বিকর্মক roots.
14. Cases and case-endings in general.
15. Compounds—general knowledge of principal compounds along with main সমাসান্ত suffixes.

**(3) ADDITIONAL PALI****CLASSES IX & X****One Paper—100 marks****Distribution of Marks**

(1) Text	60 marks
(Questions requiring a detailed study of the prescribed pieces including descriptive and Grammatical Questions from Text).	
(2) Grammar & Composition	20 marks
(3) Translation from First Language or English into Pali	20 marks
Total	<hr/> 100 marks

**CLASS IX****Text Book :**

Path-Sangaho [ Published by West Bengal Board of Secondary Education (Second Edition). ]

**Prescribed pieces :**

- Prose :** 1. Kutavanija-Jataka ; 2. Nakkhatta-Jataka ;  
3. Sujata-Jataka ; 4. Sihacamma-Jataka.
- Poetry :** 1. Mangalam ; 2. Sunihita-Nidhi ;  
3. Metta.

**Grammar :**

Elements of Pali Grammar (Published by West Bengal Board of Secondary Education)

Chapter II : Sandhi ;



Chapter V : Change of Gender ;

Chapter VI : (Declension—pages 50 to 81) :

Chapter VIII : (Conjugation of Verbs—pages 116 to 150) ;

Chapter XIV : (Case-endings and their applications).

### **Written Exercises :**

Translation of simple sentences into Pali.

## **CLASS X**

### **Text Book :**

Patho-Sangaho (Published by West Bengal Board of Secondary Education)

### **Prescribed pieces :**

**Prose :** 1. Baveru-Jataka ; 2. Sammodamana-Jataka ;  
3. Cammasataka-Jataka ; 4. Maha-Pajapati-Gotami.

**Poetry :** Peta-Dakkhina ; Citta ; Puppha ; Mahinda Katha.

### **Grammar :**

Elements of Pali Grammar (Published by West Bengal Board of Secondary Education)

Chapter IX : Derivative Verbs (Passive and Causative) ;

Chapter X : Primary Derivatives (Participles, Infinitive and Gerund) ;

Chapter XV : Compound (Samasa).

### **Written Exercises :**

Translation from English or First Language into Pali

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## (4) ADDITIONAL PERSIAN

## CLASSES IX &amp; X

One Paper—100 marks

## 1. Distribution of marks

. Text	...	...	55 marks
(a) Short question on Prose and Poetry			15
(b) Translation from Persian into First Language	...	...	15
(c) Explanation in Persian/First Language/English	...	...	10
(d) Comprehension test in persian	...		10
(e) Memory work	...	...	5
			<hr/> 55
2. (a) Translation from unseen passages into First Language/English	...		10
(b) Translation from English into Persian	...	...	10
3. (a) Textual Grammar	...	...	10
(b) Grammar from outside text	...		15
		Total	<hr/> 100

## II. Syllabus :

Text-book : Intekhab-e Farsi (Persian Selection) 4th edition published by the West Bengal Board of Secondary Education.

## Pieces prescribed

## CLASS IX

	Prose		Page
1. Gulistan-i Saadi	...	...	26—33
2. Baharistan-i-Jami	...	...	52—54
3. Farsi-i-Jadid	...	...	55—65 (middle)

**Poetry**

- |                        |     |     |                        |
|------------------------|-----|-----|------------------------|
| 1. Rubaiyat-i-Attar    | ... | ... | 175 (Ruba' i no. 1-10) |
| 2. Qata'at-i-Ibn Yamin | ... | ... | 182—183 (Whole)        |

**CLASS—X****Prose**

- |                              |     |     |                 |
|------------------------------|-----|-----|-----------------|
| 1. Kalila-wa-Dimna           | ... | ... | 233—236         |
| 2. Asrarut-Tawhid            | ... | ... | 239—246         |
| 3. Mutaibat Mulla Nasiruddin | ... |     | 297—300 (whole) |

**Poetry**

- |   |     |                             |
|---|-----|-----------------------------|
| 1. Shahnama-i-Firdausi                    | ... | 303—305 (Yazdan<br>Shinasi) |
| 2. Sukhanwaran-i-Iran Dar'<br>Aar-i-Hazir | ... | 337—342                     |
| ( 1. Mother                               |     |                             |
| 2. Dar Mazammat-i-<br>Sharab              |     |                             |
| 3. Mard wa Zan                            |     |                             |
| 4. Watan )                                |     |                             |

**III. Syllabus in Grammar for Classes IX & X.**

1. Izafat.
  2. Adad (Number).
  3. Sifat (Adjective).
  4. Afa'al (Verbs)—Muthbaf, Manfi, Ma'ruf, Majhul,  
Lazmi, Mutaddi.
  5. Zaman (Tense)—Past, Present, Future, Mudara  
(Aorist), Amr, Nehi.
  6. Kinayat—Ism Ishara, Ism Mausul, Zamir.
-

## (5) ADDITIONAL ARABIC

## CLASSES IX &amp; X

## One Paper—100 marks

1. Distribution of marks :—			Marks
Text	...	...	60
1. Prose	...	...	40
(i) Amthalul Arab (Amplification)—		...	5
(ii) Ayatul Karimah (Explanation)—		...	10
(iii) Short questions regarding a detailed study of the prescribed pieces (to be answered in English/Major Vernacular)...			15
(iv) Translation from Arabic into Major Vernacular/English		...	10
2. Poetry	...	...	20
(i) Explanation in Major Vernacular/English	...	...	10
(iii) Translation from Arabic into Major Vernacular/English	...	...	10
3. Grammar	...	...	15
4. Translation from English with Bengali version into Arabic			15
5. Comprehension Test in Arabic from an unseen passage (standard Class VIII)			10
			<hr/> 100

**Text Book**—Arabic Selections for Madhyamik Pariksha published by Haraf Prakasani (Latest Edition) on behalf of Board.



# Pieces to be read

## CLASS IX ( 1979 )

### I. Prose

1	Abul Alā al Maarri	...	...	2
2.	Rusulu Qaisar	...	...	5—6
3.	Umaru wal Ghulamu	...	...	7
4.	Salahuddin wal Maratu	...	...	7—8
5.	Hikayatu Adham	...	...	9
6.	Al—Hikmatu	...	...	13—14
7.	Siratu Nuruddin	...	...	23—24
8.	Nixamul Kulk wa Tawazu'hu	...	...	24
9.	Al—Ayatul Kariman	...	...	99—101

### II. Poetry

1.	Fil Ibtihal	...	...	106
2.	Min Diwan-e-Ali	...	...	110—112
3.	Min Diwani Abil Atahiyyah	...	...	122—123
4.	Fil Ilme wa Sharafihi	...	...	143—144
5.	Inda Ma yatil Masau	...	...	154

### III. Grammar

Outlines of the following topics have been prescribed for Class IX (1979).

An-Nisbat ; at-Tasghir ; al-Jam'us Salim ; al-jam'ul Mukassar and Its popular measures ; al-Mu'rab wal-Mabni ; al-Munsarif wa Ghayrul Munsarif : Asma ush-Shurut ; Asmaul Istifham ; Asmaul Af'al ; Al Af'alun Naqisah ; al-Awamil ; Huruful Jarr : Nawasibul Mudara ; Jwazimul Mudara ; al-Marfuat, al-Mansubat, al-Majrurat ; a-Fa'il wal-Maf'ul ; Mubtada

wa Khabar ; nna-Ismuhu wa Khabaruhu ; Kana Ismuhu wa khabaruhu. [ Any book on Arabic Grammar, Translation and Composition written according to the Syllabus may be used. ]

### CLASS X (1980)

#### I. Prose

1. Al haj wal Quadil Khayan	...	30—32
2. A'rabiyyun Yasiful Qamaru	...	36
3. A'rabiyyun dalla	...	37
4. Hikayatu Nasik	...	39—40
5. Ali Ibn Abi Talib wa bintuhu	...	51—52
6. Al Ghulamu wath Thalabu	...	56—57
7. Amthalul Arab	...	101—03

#### II. Poetry

1. Min wasayahu lia lbnihil Husayan	119—121
2. Diwanu Abil Atahiyah	128—130 and 133—134
3. Sighrul Umur	139—40 (upto Sidqul Mant)

#### III. Grammar

Outlines of the following topics have been prescribed for Class X (1980) :

Revision on the pieces prescribed for Class IX : al-Mafa'ilu Khamash ; al-Hal ; al-Mustathna ; al-Munada ; al-Af'alul Qulub ; al-Af'alul Muqarribah ; Af'alul Madh wal-Dham ; at-tawkid as-Sifat wal Mawsuf ; al-Badol ; al-Afal ; Farqu bayan al-Kalimah wal-Kalam ; Taqsimu Jumla'il Inshaiyyah,

Khabariayyah, Fi'lyyah, Ismiyyah, and Haliyyah. For Translation and Composition the pattern should be followed as prescribed for Class IX.

[Any book on Arabic Grammar, Translation and Composition written according to the Syllabus for Classes IX and X (combined) may be used.]

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(6) **ADDITIONAL LATIN**

(7) **ADDITIONAL GREEK AND**

(8) **ADDITIONAL CLASSICAL TIBETAN**

**Distribution of Marks for CLASSES IX & X**

One Paper—100 marks

- |  |          |
|--|----------|
| (i) Passages from the prescribed texts for translation into English or into Bengali, Hindi, Urdu or Nepali as well as for explanation, either in the Classical Languages or in English, Bengali, Hindi, Nepali or Urdu together with questions on the subject-matter of the text. Under this head, translation from texts will not carry more than 20 marks. | 60 marks |
| (ii) Questions involving the practical uses of elementary rules of Grammar including passages containing grammatical errors for correction.  | 20 marks |
| (iii) Translation of simple sentences from English into the Classical Language concerned.  | 20 marks |

**TEXT-BOOK FOR CLASSES IX & X**

**(6) LATIN**

- (1) Caesar—Gallic War (Book IV).
- (2) Vergil—Aeneid (Book II), Verses 1 to 385.

A suitable book on Grammar may be prescribed.

**(7) GREEK**

Anabasis Book I, by Xenophon (Edited by Rev. A. S. Walpole). Stockist : Macmillan & Co., Hornby Road; Bombay.

A suitable book on Grammar may be prescribed.

**(8) CLASSICAL TIBETAN**

The Matriculation course in Classical Tibetan, prepared by Lama Lobzang Mingyur & E. Denison Ross (Available from Chakrabarti, Chatterjee & Co. Ltd., 15, Bankim Chatterjee Street, Calcutta-12).

The whole book is to be read.

A suitable book on Grammar may be prescribed.

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**(9) ADDITIONAL FRENCH**

One Paper—100 marks

**A. Distribution of marks**

- (a) Questions to be set and answered in French :
- |             |     |          |
|-------------|-----|----------|
| Prose Text  | ... | 20 marks |
| Poetry Text | ... | 10 "     |
- (b) Translation from the prescribed text into  
First Language (Mother tongue) 20 "
- (c) Translation from English/Major Vernacular  
into French ... 15 "
- (d) Composition based on an outline 15 "
- (e) Grammar (applied) ... 20 "

**B. Text Book**

"En Avant" (Part II)—Berbert F. Collins  
(Macmillan).

Prose Text : From lesson 1 to lesson 20

Poetry Text : All the poems contained in the  
prescribed text book

**C. Grammar**

Grammar to be taught from the above men-  
tioned lessons from prose (1 to 20)

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**(10) GERMAN****Text Book :**

For Classes IX &amp; X

**Im Wandel Der Jahre Ein Leichtes Lesebuch Fur Auslander**  
(Maxmuller Bhavan)

German Cultural Institute,

8, Ballygunge Circular Road, Calcutta-19

**Distribution of marks (One Paper—Total Marks—100)**

For Classes IX &amp; X

(i)	Questions on Text	...	35 marks
(ii)	Translation from mother-tongue/ English into German	...	20 marks
(iii)	Composition based on an outline	...	20 marks
(iv)	Grammar test	...	25 marks
			<hr/>
			100 marks

**(C) Pieces of study for Classes IX & X**

- (i) Eine Reise Von Hamburg Nach Munchan
  - (ii) Die Deutsche Sprache
- 

**(11) RUSSIAN****CLASSES IX & X****A. Distribution of Marks (One Paper—100 marks)**

1.	Questions on Text	...	30
2.	Grammar :		
	(a) based on text	30	
	(b) other	20	
			<hr/>
		...	50
3.	Composition based on outline	...	20
			<hr/>
			100

**B. Text Book**

Russian — V. N. Wagner, Y. G. Ovsienko

**C. Pieces of Study**

Class IX — Lessons 1 to 19

Class X — Lessons 20 to 32.

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**(12) HINDI**

**One Paper—100 marks**

**Distribution of Marks**

Prose Text	25	
Short story (Rapid Reader)	10	
Poetry Text	25	
Composition (Letter writing, Paragraph writing/Comprehension test)	20 (10+10)	
Grammar	20	100 marks

**1. Text Book :**

**BHARATI BHAG I**—Published by Jnanada Prakashan  
24, Dariaganj, New Delhi-110002  
on behalf N C.E.R.T., New Delhi,

The following pieces from **BHARATI BHAG I** are prescribed.

**CLASS IX****Prose :**

- |                             |                        |
|-----------------------------|------------------------|
| 1. Shanti-Doot Shri Krishna | Mahabir Prosad Dwivedi |
| 2. Pariksha                 | Premchand              |
| 3. Guru Nanak               | D. P. Maheshwari       |

**Poetry :**

- |                      |                       |
|----------------------|-----------------------|
| 1. Hamara Desh       | Subrahmanya Bharati   |
| 2. Man Kah Ek Kahani | Maithili Sharan Gupta |
| 3. Chidia            | Aarsi Prasad Singh    |

**CLASS X**

**Prose :**

- |                            |                     |
|----------------------------|---------------------|
| 1. Pawal Garh Ka Raj Kumar | Jim Corbett         |
| 2. Rakhi Ka Mulya          | Hari Krishna Premi  |
| 3. Ganga                   | Selection Committee |

**Poetry :**

- |                        |                       |
|------------------------|-----------------------|
| 1. Do Mitra            | Sumitra Nanda Pant    |
| 2. Niti Ki Dohe        | Rahim                 |
| 3. Pushpa Ki Abhilasha | Makhan Lal Chaturvedi |

**II. Short Story (Rapid Reader) :**

**NAVINA KAHANI SANGRAHA Pt. I**

Edited by Rashtra Bhasha  
Prachara Samiti, Wardha.  
(All the short stories—5 in all)

**III. Grammar :**

1. Parts of Speech—Simple treatment.
2. Types of Hindi words—Tatsama, Tadbhava, Deshi and Videshi— on the basis of the texts prescribed)
3. Number
4. Gender
5. Case



6. Tense—Voice (simple treatment)
7. Sentence : Simple, Compound and Complex.
8. Sandhi (simple treatment)
9. Samasa (simple treatment)
10. Pratyaya
11. Upasarga.

### Composition :

1. Letter writing    2. Paragraph writing/Comprehension
  3. Idioms and Proverbs (as in the text)
- 

(13) **PORTUGUESE**

(14) **SPANISH**

(15) **TALIAN**

(16) **NEPALI and**

(17) **CLASSICAL ARMENIAN**

The syllabuses in the above languages will be notified later on.

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## ACADEMIC SUBJECTS

## (1) (Additional) MATHEMATICS

## CLASSES IX &amp; X

## CLASS IX

Marks

20

## 1. Algebra.

Polynomials : Remainder theorem ; Divisibility. Harder Factors. Solution of linear simultaneous equations involving three unknowns. (cases of non-existence of unique solutions to be explained through examples). Solution of quadratic equation of the form  $ax^2+bx+c=0$ , and its applications to simple problems. (Cases involving imaginary roots excluded). Solution of simultaneous equations involving two unknowns of which one equation is quadratic and the other linear, and also their graphical solutions.

## 2. Plane Geometry.

10

(i) To prove :

(a) The internal bisector of an angle of a triangle divides the opposite side internally in the ratio of the sides containing the angle ; and likewise the external bisector externally.

(b) The ratio of the areas of similar triangles is equal to the ratio of the squares on the corresponding sides.

- (c) The angles made by a tangent to a circle with a chord drawn from the point of contact are respectively equal to the angle in the alternate segment of the circle *Marks*
- (d) If two chords of a circle intersect either inside or outside the circle, the rectangle contained by the parts of one is equal to the rectangle contained by the parts of the other.

(ii) Problems based on the above propositions.

### 3. Solid Geometry.

10

(i) Activities verifying the following :

- (a) One and only one plane may be made to pass through any two intersecting straight lines.
- (b) Two intersecting planes cut one another in a straight line in no points outside it.

(ii) Assuming the above propositions as axioms, to prove the following propositions :

- (a) If a straight line is perpendicular to each of two intersecting straight lines at their point of intersection, it is also perpendicular to the plane in which they lie.
- (b) All straight lines drawn perpendicular to a given straight line at a given point of it are coplaner.

- (c) If two straight lines are parallel and one of them is perpendicular to a plane, then the other is also perpendicular to that plane. *Marks*

(iii) Problems based on the above propositions.

(iv) Acquaintance with—

- (i) angle between two planes.
- (ii) angle between a straight line and a plane,
- (iii) parallel planes,
- (iv) a line parallel to a given plane,
- (v) skew line,
- (vi) projection of line segments on another line or plane.

#### 4. Elementary Statistics.

10

Statistical data : Tabulation, Graphical representation, Bar Graphs, Frequency distribution ; Graphical representation, Histogram.

### CLASS X

#### 1. Algebra of Sets.

20

Sets and Elements ; Basic operations ; Union, intersection, and Complementation. VENN diagram. Fundamental laws of the Algebra of Sets. Simple Applications.

#### 2 Elements of Transformation Geometry.

20

Concept of Euclidian Transformations : Symmetry, Reflection, Translation and Rotation. Enlarge-



ments. Combinations of Transformations : Congruences ; Similarity. Use of Transformation Geometry in establishing simple and important geometrical properties Viz :

- (i) If two sides of a triangle are congruent, then the angles opposite to them are congruent.
- (ii) If two straight lines cut each other, the vertically opposite angles are equal.
- (iii) Congruences of two triangles . SAS, AAS.
- (iv) When a straight line cuts two other straight lines those other two straight lines are parallel if a pair of corresponding angles are equal.
- (v) In a circle equal chords cut off equal arcs and subtend equal angles at the centre, and conversely.
- (vi) Given a correspondence between two triangles, if corresponding angles are congruent then the corresponding sides are proportional, and conversely.

### 3. Elementary Statistics.

Average : Mean, Median, and Mode. Standard deviation. Simple application Problems.

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**Guidelines on the teaching of Additional Mathematics according to the revised syllabus introduced in Class IX in 1981 and in CLASS X in 1982.**

### **General Instructions**

1. The whole syllabus in Additional Mathematics should be treated as an integral one and hence the teachers are at liberty to teach the areas covered in the syllabus in any sequence that they think suitable from logical and intelligible point of view.

2. As the teaching of plane Geometry depends on some knowledge to be acquired in compulsory Mathematics, Class X, it is suggested that the areas may be taught in the following sequence :

Class IX : Algebra, Solid Geometry, Statistics (included in Classes IX & X)

Class X : Algebra of sets, Elements of Transformation Geometry, Plane Geometry.

3. The distribution of marks for Elementary Statistics will be on the whole syllabus (Which has now been suggested to be taught in Class IX), and not separately on the syllabus of Class IX and Class X.

4. Details of scope and limit of different topics excepting plane Geometry are given in the special instructions for guidance of teachers, authors and paper setters. No details of scope and limit are necessary for Plane Geometry (10 marks), which is to be taught in Class X.

## SPECIAL INSTRUCTIONS

(Details of scope and limit)

(Algebra—20 marks)

## 1. Polynomials : Remainder Theorem : Divisibility.

Rational and integral expressions ; Remainder Theorem, Divisibility and factor Theorem ; Tests for divisibility of the expressions in the form  $a^n \pm b^n$  by  $a \pm b$  (in case of divisibility, the expressions for quotient may be stated) ; condition for which  $x - a$  will be a common factor of the expression  $lx^2 + mx + n$  and  $px^2 + qx + r$ .

## 2. Harder factors.

Factorisation of the expressions

- (i)  $a^3 + b^3 + c^3 - 3abc$
- (ii)  $a^2(b+c) + b^2(c+a) + c^2(a+b) + 2abc$   
 $bc(b+c) + ca(c+a) + ab(a+b) + 2abc$   
 $a(b^2 + c^2) + b(c^2 + a^2) + c(a^2 + b^2) + 2abc$
- (iii)  $a^2(b-c) + b^2(c-a) + c^2(a-b)$   
 $bc(b-c) + ca(c-a) + ab(a-b)$   
 $a(b^2 - c^2) + b(c^2 - a^2) + c(a^2 - b^2)$
- (iv)  $a^2(b+c) + b^2(c+a) + c^2(a+b) + 3abc$   
 $bc(b+c) + ca(c+a) + ab(a+b) + 3abc$   
 $a(b^2 + c^2) + b(c^2 + a^2) + c(a^2 + b^2) + 3abc$
- (v)  $(a+b+c)(bc+ca+ab) - abc$   
 ( set of formulae (iv) may be assumed )
- (vi)  $(b+c)(c+a)(a+b) + abc$   
 ( set of formulae (i) may be assumed )
- (vii)  $a^3(b-c) + b^3(c-a) + c^3(a-b)$



- (viii)  $2b^2c^2 + 2c^2a^2 + 2a^2b^2 - a^4 - b^4 - c^4$   
 (ix) Factorisation of reciprocal expressions.  
 (x) Factorisation by applying factor theorem.  
 (xi) Factorisation of the expressions like  
 $a^2 + 4b^3 + 2c^2 + 5ab + 3ac + 9bc$

### 3. Solutions of simultaneous equations involving three unknowns :

(Cases of non-existence of unique solutions to be explained through examples)

- (i) Solutions of equations of the form  $a_1x + b_1y + c_1z = d_1$ ,  
 $a_2x + b_2y + c_2z = d_2$  and  $a_3x + b_3y + c_3z = d_3$  ;  
 when (a) none of these  $a, b, c, d$ 's are zero,  
 (b)  $d_1 = d_2 = 0$ , (c)  $a_1 = b_2 = c_3 = 0$ ,  
 (d) One or more variables are of reciprocal forms

$$\frac{1}{x}, \frac{1}{y}, \frac{1}{z}$$

- (ii) Solutions of equations of the form  
 $x + y = a, y + z = b, z + x = c$  or

$$\frac{1}{x} + \frac{1}{y} = a, \frac{1}{y} + \frac{1}{z} = b, \frac{1}{z} + \frac{1}{x} = c$$

4. Solution of quadratic equation  $ax^2 + bx + c = 0$  and its application to simple problems (cases involving imaginary roots excluded). Cases when (i)  $b = 0$ , (ii)  $c = 0$ , (iii)  $b = c = 0$  are to be discussed,

The formula for solution set  $x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$  may be

assumed when solving a problem : Equations involving surds and indices excluded),



5. Solution of simultaneous equations involving two unknowns of which one equation is quadratic and the other is linear and also their graphical solutions.

- (i) Equations involving surds and indices excluded.
- (ii) In case of graphical solutions of the quadratic equations, free-hand drawing of all curves including circle is required.

In case of quadratic equations at least nine points are to be plotted if it is not mentioned specifically. Maximum and minimum values of quadratic expressions are excluded.

### ( Solid Geometry 10 marks )

1. (a) Preliminary idea.
- (b) Point-plane and line-plane relations (to be introduced through activities wherever possible).
  - (i) Through one or two points an infinite number of planes may be made to pass.
  - (ii) Through three non-collinear points one and only one plane may be made to pass.
  - (iii) Through one straight line an infinite number of planes may be made to pass.
  - (iv) Through two intersecting straight lines one and only one plane may be made to pass.
  - (v) Through two parallel lines one and only one plane may be made to pass.

- (vi) Through three pairwise intersecting straight lines or through three straight lines, two of which are parallel and the other intersects them, one and only one plane may be made to pass. [ The above property may be deduced from properties (iv) and (v). ]
  - (vii) A straight line may not meet a plane—straight line is parallel to the plane.
  - (viii) A straight line intersects a plane at one point.
  - (ix) If two points of a line lie in a plane, the line lies wholly on the plane.
  - (x) Skew lines.
  - (xi) Two intersecting planes cut one another in a straight line and no points outside it.
  - (xii) Parallel planes.
  - (xiii) Angle between two planes—dihedral angle.
  - (xiv) A line perpendicular to a plane.
  - (xv) Projection of line segments on another line or plane.
2. (a) Theorem 1—the result of Apollonius' Theorem may be stated before proving the theorem, if this result is used to prove the theorem.
- (b) Theorem 3—The idea of dihedral angle may be used to prove the theorem.

### Elementary Statistics ( 20 marks )

( To be taught in Class IX )

1. Statistical data ; tabulation of data ; bar graph ; scores—continuous and discrete ; raw data ; arrayed data, class-interval, limits of class intervals ; frequency of a class interval ;

forming frequency distribution table by tally methods—  
 (i) scores with corresponding frequencies (ii) class-interval  
 scores with corresponding frequencies ; cumulative frequencies ;  
 construction of Histogram, simple interpretations.

2. Mean (arithmetic), Median and Mode—their distinctions.

(a) **Calculation of Mean :**

(i) Simple A. M. =  $\frac{\sum x}{n}$  (from ungrouped data)

(ii) Weighted A. M. =  $\frac{\sum fx}{n}$  (from ungrouped data)

(iii) Weighted A. M. =  $\frac{\sum fx}{n}$  (from grouped data),  $x$  is the  
 mid value of the class.

(iv) Simple A. M. =  $A + \frac{\sum d}{n}$ , ( $A$  is the assumed mean,  
 $d$  is the deviation from assumed mean).

(v) Weighted A. M. =  $A + \frac{\sum fd}{n}$

(vi) Weighted A. M. =  $A + \frac{\sum fd^1}{n} \times i$  (grouped data where  
 $d^1 = \frac{d}{i}$ ,  $i$  is the width of the class interval).

(b) **Calculation of Median :**

(i) Median = the middle most item, when the number of  
 item is odd

$$= \frac{N+1}{2} \text{ th item (ungrouped)}$$

(ii) Median = Average of two middle most items when  
 number of items is even

$$= \frac{\frac{N}{2} \text{ th item} + \left(\frac{N}{2} + 1\right) \text{ th item}}{2}$$

(ungrouped data)



$$(iii) \text{ Median} = 1 + 2 \frac{N - F}{f_m} \times i \text{ (notations with usual meanings, grouped data)}$$

(c) **Calculation of Mode :**

(i) Mode = Score having highest frequency,

(ii) Mode - Mid point of the class interval having highest frequency

(iii) Mode = 3 Median - 2 Mean

$$(iv) \text{ Mode} = 1 + \frac{d_1}{d_1 + d_2} \times i = 1 + \frac{f_m - f_1}{2f_m - f_1 - f_2} \times i \text{ notations with usual meanings)}$$

3. Standard deviation—Definition. Calculation of Standard deviation from Mean

$$(i) \text{ S. D.} = \sqrt{\frac{\sum (x - M)^2}{N}} \text{ (raw scores)}$$

$$(ii) \text{ S. D.} = \sqrt{\frac{\sum x^2}{N} - M^2}, \text{ (raw scores)}$$

$$(iii) \text{ S. D.} = \sqrt{\frac{\sum f (x - M)^2}{N}} \text{ (ungrouped frequency distribution).}$$

$$(iv) \text{ S. D.} = \sqrt{\frac{\sum fx^2}{N} - M^2} \text{ (ungrouped frequency distribution).}$$

$$(v) \text{ S. D.} = \sqrt{\frac{\sum f (x - M)^2}{N}} \text{ (grouped frequency distribution)}$$

$$(vi) \text{ S. D.} = \sqrt{\frac{\sum fd^2}{N} - \left(\frac{\sum fd}{N}\right)^2} \text{ (grouped frequency distribution),}$$

[ M = Arithmetic Mean ]

Simple uses of above statistical indices and related application problems.



**Algebra of Sets (20 marks)****1. Sets and Elements ;**

Set, elements of a set, finite set, writing of set—Roster form and set-builder form, empty set, null set, sub-set, proper sub-set, equal sets, Universal set, power set.

Properties of a sub-set :  $\phi$  is a sub-set of any set (statement only) ; A is a sub-set of A ; if A is a sub-set of B and B is a sub-set of C, then A is a sub-set of C.

**2. Basic operations :**

Union, Intersection, Complementation, Difference, Symmetric Difference : Disjoint sets.

3. Venn diagram : Venn diagram representing sets and set operations.

**4. Fundamental laws of Algebra of Sets :**

(i) Commutative Laws :  $A \cup B = B \cup A$ ,  $A \cap B = B \cap A$

(ii) Associative laws ;  $A \cup (B \cap C) = (A \cup B) \cap C$   
 $A \cap (B \cup C) = (A \cap B) \cup C$

(iii) Distributive laws ;  $A \cup (B \cap C) = (A \cup B) \cap (A \cup C)$   
 $A \cap (B \cup C) = (A \cap B) \cup (A \cap C)$

(iv) Idempotent laws:  $A \cup A = A$ ,  $A \cap A = A$

(v) Absorption laws :  $A \cup (A \cap B) = A$ ,  $A \cap (A \cup B) = A$

(vi) Identity laws :  $A \cup \phi = A$ ,  $A \cap \phi = \phi$   
 $A \cup U = U$ ,  $A \cap U = A$

(vii) Laws of complementation :  $A \cup A' = U$ ,  $A \cap A' = \phi$   
 $U' = \phi$ ,  $\phi' = U$   
 $(A')' = A$

(viii) De-Morgan's laws :  $(A \cup B)' = A' \cap B'$ ,  
 $(A \cap B)' = A' \cup B'$

Verification of these laws only by Venn diagrams (No formal proof) ; Application of these laws to simplify sets (simple cases)

### 5. Number of elements of a set.

Formula for number of elements of Union of two sets,

$$n(A \cup B) = n(A) + n(B) - n(A \cap B)$$

Verification by taking specific sets and also by Venn diagrams, Application of this formula to solve some arithmetical problems.

### Symbols to be used

- (i)  $\in$  (belongs to)
- (ii)  $\notin$  (does not belong to)
- (iii)  $a, b, c, \dots$  elements of a set
- (iv)  $A, B, C, \dots$  Sets
- (v)  $A = \{x : P(x)\}$  ;  $x$  is an element of the set  $A$  such that all those elements have the property  $P(x)$ ,
- (vi)  $\subseteq$  Sub-set
- (vii)  $\subset$  proper sub-set
- (viii)  $\supseteq$  contains
- (ix)  $\phi$  or  $\{ \}$  empty set
- (x)  $U$  Universal set
- (xi)  $P(A)$  power set of  $A$
- (xii)  $\cup$  Union
- (xiii)  $\cap$  Intersection
- (xiv)  $|$  Complement
- (xv)  $-$  difference
- (xvi)  $\Delta$  Symmetric difference
- (xvii)  $n(A)$  number of elements of set  $A$ .

**Elements of Transformation Geometry ( 20 marks )****1. Concept of Euclidean Transformation :**

No formal definition should be given. The motion or transformation becomes a necessity for purposes of congruence should be brought out with the help of results already known to the students.

**2. Reflection : Definition ; Line of reflection,**

Recapitulation of following properties as obtained in Class VII.

- (i) Given a line reflection, every point has exactly one image.
- (ii) The reflection of a line is a line (i. e., collinearity is preserved).
- (iii) The image of P under a reflection is between the images of A and B, if and only if P is between A and B (i. e. betweenness is preserved).
- (iv) If  $A'$ ,  $B'$ , be the images of A and B under a reflection, then  $AB = A'B'$  (i. e. distance is preserved)
- (v) The image of an angle under a reflection is of the same measure as that of the angle. (Measure of an angle is preserved).
- (vi) Reflections reverse orientation.
- (vii) Line of reflection and all lines perpendicular to it are fixed.
- (viii) Points on the line of reflection are fixed points.

**3. Translation—Definition ; direction and magnitude.**

Recapitulation of properties as obtained in Class VII.

Properties (i) to (v) of reflection and



- (vi) Translations preserve orientation.
- (vii) There is no fixed point in case of translation.
- (viii) Lines in the direction of translation are fixed lines ; images of other lines are parallel to those lines.
- (ix) Distance between the image of a point and the point (pre-image) is equal to the magnitude of translation.
- 4. **Rotation**—Definiton ; Centre of rotation and angle of rotation.

Recapitulation of properties as obtained in Class VII.

Properties i) to (v) of reflection and

- (vi) Rotations preserve orientation.
- (vii) The centre of rotation is the only fixed point.
- (viii) There is no fixed line.
- (ix) If O be the centre of rotation and  $A'$  be the image of any point A, then  $\angle AOA'$  has the same measure as that of the angle of rotation.
- (x) The angle between the image of a line and the line itself is equal to the angle of rotation.
- 5. **Symmetry** : Definition.

- (i) Reflection Symmetry, line of symmetry. Line symmetry of following figures—a line segment, an angle, isosceles triangle, an equilateral triangle, a rectangle, a square, a kite, a circle.
- (ii) Rotation Symmetry, centre of symmetry, order of symmetry, Centre and order of symmetry of the following figures—a line segment, an equilateral triangle, a parallelogram, a rhombus, a rectangle, a square, a circle.



## 6 Combinations (compositions) of transformations :

- (i) Composition of the two reflections in the same line—an Identity transformation.
- (ii) Composition of reflections in two parallel lines—a translation in the direction perpendicular to the parallel lines and with magnitude twice the distance between the parallel lines.

[ A translation can be obtained by applying reflections in two parallel lines, anywhere in the plane, perpendicular to the direction of translation and the distance between the parallel lines equal to half the magnitude of translation. ]

- (iii) Composition of reflections in two intersecting lines – a rotation with point of intersection as the centre of rotation and angle of rotation twice the angle between the intersecting lines.

[ A rotation can be obtained by applying reflections in any two lines passing through the centre of rotation and angle between the lines equal to half the angle of rotation. ]

- (iv) Composition of reflections in two perpendicular lines—a half-turn which is equivalent to a rotation with an angle of  $180^\circ$ ; point reflection—Definition : commutative property of half-turns.
- (v) Composition of reflections in three parallel lines—Reflection in a line parallel to these lines (equivalent to composition of a translation and reflection in a line perpendicular to the direction of translation).

- (vi) Composition of reflections in three concurrent lines—Reflection in a line concurrent to these lines. (equivalent to composition of a rotation and reflection in a line passing through the centre of rotation).
- (vii) Composition of reflections in three lines neither parallel nor concurrent—glide reflection. (Statement only)  
(This is equivalent to composition of reflections in three lines of which two are parallel and the other is perpendicular to them, i.e. combination of a translation and a reflection in a line in the direction of the translation .
- (viii) Composition of two rotations with same centre—a rotation with that centre and angle of rotation equal to the sum of the angles of rotations.
- (ix) Composition of two half-turns about the same point—an Identity transformation.
- (x) Composition of two rotations with different centres—a rotation with a centre different from these centres and angle of rotation is equal to the algebraic sum of the angles of rotations.
- (xi) Composition of two half-turns about different points—a translation in the direction of the segment joining the centres of half-turns and magnitude equal to twice the length of the segment. [A translation can be replaced by two half-turns whose centres lie on the direction of translation, the distance between the centres being half the magnitude of translation.]
- (xii) Composition of two translations in the same direction—a translation in the same direction.
- (xiii) Composition of two translations in different directions—a translation.
- (xiv) Composition of a translation and a rotation—a rotation.

7. Isometry—definition

8. Congruence :

Axiom of congruence—The image of a figure under an isometry is congruent to the pre-image.

Congruence of two figures, directly congruent figures, oppositely congruent figures.

9. Proof of Geometrical properties :

Theorem 1—application of a reflection in a line which is bisector of the vertical angle.

Theorem 2—application of the rotation about the point of intersection through an angle of  $180^\circ$ . or application of reflection in a line which is bisector of one of the angles.

Theorem 3—when directly congruent, application of a translation and a rotation or reflections in two lines ; when oppositely congruent application of a reflection, translation and a rotation or reflections in three lines.

Theorem 4—Application of translation.

Theorem 5—Application of rotation about the centre (The first part may be proved by S S S congruence property.

Converse of Theorem 5—Application of rotation about the centre.

[Note : For proving the theorem any transformation, which is logical, may be applied.]



10. **Enlargement**—Definition, centre and magnitude  $K(K \neq 1, K = 1, K = -1$  ( $K$  may be positive or negative) Properties of enlargement :

- (1) Enlargement preserves collinearity, betweenness and angle measures.
- (2) The centre of enlargement is the only fixed point.
- (3) All lines passing through the centre of enlargement are fixed lines.
- (4) The images of lines not passing through the centre of enlargement are parallel to the lines.
- (5) If  $A', B'$  be the images of two points  $A$  and  $B$ , then  $A'B' = K.AB$ .
- (6) Orientation is preserved.

11. **Similarity transformation :**

Definition—composition of an enlargement and an isometry. Similar figures : definition—Two figures are similar if one can be made to coincide with the other by a similarity transformation.

12. **Proof of Geometrical properties :**

- (vi) Theorem 6 & 7—Application of an enlargement of magnitude equal to the ratio of a pair of corresponding sides and then an isometry.

13. **Symbols to be used :**

$l$  (A) Reflection of a point  $A$  in the line  $l$

$O_\theta$  (A) Rotation of a point  $A$  about the centre  $O$  through an angle  $\theta$



$T_{PQ}(A)$	Translation of a point A in the direction PQ with magnitude PQ.
ml	Composition of two reflections first in the line l and then in the line m,
$l^2$	Composition of two reflections in the same line l.
I	Identity transformation.
$H_A$	Half-turn about the point A
E	Enlargement
S	Similarity transformation
$t$	Isometry.
PQ	Segment PQ
$\rightarrow$	
PQ	Ray PQ
$\leftrightarrow$	
PQ	Line PQ

## (2) ELEMENTS OF DISCRETE MATHEMATICS

### Distribution of marks :

Algebra of Sets	...	...	40
Symbolic Logic and Algebra of Proposition	...	...	10
Circuits for Arithmetic Computation	...	...	30
Elementary concepts of Computers and programming	...	...	20
			<hr/> 100 <hr/>

## SYLLABUS

### CLASS IX

#### Algebra of Sets :

Element and Set, basic operations ; union, intersection, complement, Venn diagram, Fundamental laws of Algebra of sets, principle of duality ; Boolean Algebra ;

Definition and properties. Disjunctive and conjunctive forms. Boolean functions and their simplification.

#### Symbolic Logic & Algebra of Propositions :

Symbols, proposition, Truth Tables. Object logic and Syntax logic. Implication and Equivalence, Truth sets for propositions.

### CLASS X

#### Circuits for Arithmetic Computation :

The binary number system. Logical circuit elements. AND, OR, and Flip-Flop circuits. Addition, Subtraction and Multiplication of Binary numbers. Circuits for series and parallel addition and subtraction.

Elementary concepts of digital computers, source language, compilers and machine language, Simple cases of Fortran programming.

#### Reference Books :

- (1) Boolean Algebra and Applications—J. Eldon Whitesite. Addition—Wesely Publishing Company).

- (2) Fortran IV. Programming (Based on the I. B. M. System VI 30 Robert—V, Jamison).  
(Mc Graw—Hill Book Company).
  - (3) Computer Method and Numerical Analysis—R. H. Pennington.  
(The Macmillan Company).
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### (3) PHYSICS

#### SYLLABUS

The Course shall include the following in addition to the courses on similar topics prescribed for Physical Sciences :

#### 1 General ideas :

- (i) Units of length, mass and time Measurement of length ; principle of vernier ; screw gauge. Measurement of volume (from dimensions and by displacement of liquid). Use of stop clock. Use of spring balance and ordinary beam balance (upto a decigram only)—to be practised in the laboratory.
- (ii) Concept and definition of density and specific gravity of a solid, liquid and gas.
- (iii) Concepts of force in terms of weight and of pressure.
- (iv) Simple experimental study of fluid pressure ; to show that pressure depends on  $\rho$  and  $h$  and may be expressed as  $\text{lb/ft}^2$  or  $\text{gm/cm}^2$ . Pascal's law, Hydraulic press—it multiplies force but not pressure. Archimedes' principle. Buoyancy. Floating bodies (no numerical problem). Common hydrometer (description and method of use only. Application of Archimedes' principle for determining the volume and specific gravity of a solid (heavier than water and insoluble).

- (v) Atmospheric pressure (simple experiments to demonstrate). Simple barometer. Boyle's law. Syringe. Vacuum pump ; compression pump ; common (water) pump.
- (vi) Velocity : momentum ; acceleration ;  $S = ut + \frac{1}{2} at^2$  (graphically). Newton's Laws of Motion :  $P = mf$   
Units of force—dyne, poundal, gm.wt., lb. wt.
- (vii) The Law of Universal Gravitation (statement only)  
Gravity ; falling bodies (simple problems only).
- (viii) Concepts of Work, Energy and Power.  $W = Ps$  ;  
Units of work and power ; erg, Joule, foot-pound, watt, kilowatt, horsepower. Transformation of energy (simple examples). Principle of Conservation of Energy (general acquaintance).

## 2. Heat :

- (i) Heat and Temperature. Centigrade and Fahrenheit Scales. Mercury in glass thermometer (description and principle only). Clinical Thermometer.
- (ii) Expansion of solids, Coefficient of expansion. Expansion of liquids—real and apparent ; Anomalous expansion of water. Expansion of gases ; Charles's Law ; pressure coefficient ; idea of absolute temperature. (Description of experiments for measuring coefficients not necessary)
- (iii) Units of heat—Calorie, B. Th. U., Specific heat.  
 $H = mst$  ; Heat lost = Heat gained ; Simple problems.
- (iv) Change of state (a) Melting and freezing ; (b) Liquid to vapour, evaporation and boiling, condensation. Effect of pressure on boiling. Change of volume accom-



panying change of state. Idea of latent heat—its definition. (Determination of latent heat excluded, but simple numerical problems involving latent heat included). Cooling by evaporation.

- (v) Water vapour in air—Pressure of saturated and unsaturated water vapour. Dew point. Relative humidity (determination excluded).
- (vi) Conduction, convection and radiation of heat Uses of good and bad conductors. Vacuum flask.

## 5. Light :

- (i) Rectilinear propagation of light. Pinhole camera ; shadows ; eclipses.
- (ii) Reflection at a plane surface—laws. Formation of image by a plane mirror. Characteristics of the image (virtual, equal in size to the object, laterally inverted). (Problems on moving objects or moving mirrors may be avoided).
- (iii) Refraction at a plane surface—laws. Refractive index, total internal reflection. Simple illustrations with explanation of the above phenomena. Mirage.
- (iv) Meaning of focal length and magnification with respect to a converging lens ; Formation of real images. Determination of focal length a) using a distant object ; (b) by u-v method. Distinction between real and virtual images.
- (v) Analysis and synthesis of white light : Colours of bodies.

**4 Magnetism :**

- (i) Natural and artificial magnets. Magnetic poles. Attraction and repulsion. Magnetic induction. Making magnets.
- ii) Behaviour of the Earth as a magnet. Mariner's compass.

**5. Electricity :**

- (i) Electrification by friction. Two kinds of electricity. Electrons. Conductors and insulators. Pithball and gold-leaf electrosopes. Electrification by induction—simple facts only. Simple explanation of thunder and lightning, protection from lightning.
- (ii) Simple cell. Local action and polarization. Leclanche and dry cells. Lead accumulators (description only).
- (iii) Elementary study of (a) Magnetic effect of electric current, (b) Action of Magnet on current, (c) Galvanometer as detector of current. (Principle only). Principle of electromagnet. Electric bell.
- iv) Elementary study of heating effect of current. Electric heating in the Home (Electric stove, Electric kettle, Electric iron, Electric filament lamp), (Description only No numerical calculation need be done ; but essence of Joule's law should be taught .
- (v) Chemical effect of current ; its industrial applications (e.g. electroplating, purification of metals, etc.). (Faraday's laws need not be dealt with as such).

Fundamental principles should be carefully emphasized.

The treatment should be descriptive and simple, and should be amply illustrated by suitable experiments Examples of

phenomena should be selected from common observations and everyday experience as far as possible.

Articles and apparatuses, mentioned in course of teaching but not use in class experiments, should be demonstrated as far as practicable in order that students may acquire a familiarity with them. Students should be asked to draw line diagrams of apparatuses.

### PHYSICS ( Practical )

(No practical Examination in physics will be held by the Board)

1. To measure the volume of a rectangular parallelopiped, sphere or a cylinder (using a linear vernier).
2. To weigh a solid in air and in water (with an accuracy upto one decigram) and to find the specific gravity of an insoluble solid heavier than water.
3. To determine the melting point of naphthalene from melting and freezing curves.
4. To determine the focal length of a convex lens — (i) by forming the image of a distant object, (ii) by the u-v method.
5. To trace the rays through a rectangular block of glass and to verify Snell's Law.
6. To determine the position of the image formed by a plane mirror, and to verify that angle of reflection = angle of incidence.
7. To determine the positions of the poles of a bar magnet and hence to find the ratio of the magnetic length to the physical length of the magnet



8. To construct an electromagnet from a soft iron rod and to determine its polarities with a compass needle.
  9. To determine the directions of the flow of current with a magnetic needle.
- 

## (4) CHEMISTRY

### SYLLABUS

The course shall include the followings, in addition to the courses on similar topics prescribed for Physical Sciences :

1. Scope of Chemistry.
2. Common laboratory processes :

Solution (saturated and unsaturated), decantation, filtration, evaporation, crystallisation and sublimation.

3. Physical states of matter, melting and boiling points, physical and chemical changes, mechanical mixtures and chemical compounds, elements and compounds, metals and non-metals.

4. Air :

- (i) Lavoisier's experiment
- (ii) air is a mixture and not a compound
- (iii) composition of air
- (iv) other gases in air besides oxygen and nitrogen—only names.

5. Oxygen :

- (i) preparation by heating (a) mercuric oxide, and (b) potassium chlorate—Function of manganese dioxide in the method, (c) catalysis (only definition and illustration).



- (ii) properties and uses,
- (iii) combustion (definition and illustration),
- (iv) acidic, basic and neutral oxides.

6. **Nitrogen :**

- Preparation
- (i) from air by white phosphorus,
  - (ii) from ammonium nitrate (by laboratory method).

7. **Hydrogen :**

- (i) preparation from (a) dilute acids and (b) water (action of sodium on water, action of steam on red hot iron),
- (ii) properties and uses,
- (iii) preparation of hydrogen and oxygen by the electrolysis of water.

8. **Water :**

- (i) hard and soft water
- (ii) removal of hardness
  - (a) by boiling (b) with lime (c) with permutit
- (iii) purification of water for
  - (a) laundry (b) drinking purposes (c) laboratory use.
- (iv) Action of water on oxides of metals (sodium and calcium) and on oxides of non-metals (carbon and sulphur).
- (v) Water is a compound of hydrogen and oxygen—study of the volumetric composition of water—by
  - (a) analytical method and (b) synthetic method.

**9. Atoms and molecules :** elementary ideas about atomic weights and molecular weights, symbols and formulae, elementary ideas about valency, equations for simple chemical reactions.

**10. Oxidation and reduction :** definition and illustrations from compounds containing hydrogen and from compounds which do not contain oxygen or hydrogen. Reduction of cupric oxide with hydrogen and formation of water and calculation of the proportion of oxygen and hydrogen in water from this reaction

Oxidizing agents (oxygen, chlorine, nitric acid) reducing agents (hydrogen, sulphuretted hydrogen, sulphur dioxide).

**11. Elementary ideas about electrolysis :** cations and anions (Faraday's laws not required).

Products of electrolysis of—

- (i) acidulated water.
- (ii) sodium sulphate solution.
- (iii) concentrated hydrochloric acid.

**12. Ammonia :** (i) preparation, (a) by laboratory method.  
(b) synthetic method (outline only)  
(ii) properties and uses.

**Refrigeration :**

**Ammonium salts :** (carbonate, chloride, nitrate & sulphate)—  
their preparation and uses.

**Ammonium hydroxide and its uses.**

- 13 **Nitric Acid** : (i) Laboratory method of preparation,  
 (ii) properties and uses,  
 (iii) Action of heat on nitrates of sodium, ammonium, copper, lead and iron,  
 (iv) Action of nitric acid on sulphur, carbon and copper.
14. (i) Laws of conservation of mass, definite proportion and multiple proportion—examples to illustrate the laws.  
 (ii) Dalton's atomic theory (explanations of the laws of chemical combination by weight may be omitted).  
 (iii) Boyle's Law and Charle's Law (experimental verification not required). Gas equation—sums requiring the use of the gas equation.  
 (iv) Gay Lussac's Law of gaseous volume.  
 (v) Avogadro's Hypothesis : (a)  $M = 2D$  (deduction not required), (b) Deduction of formulae of gaseous compounds from volumetric composition.  
 (vi) Molecules, gram. molecules, gram molecular volume.  
 (vii) Simple calculations of weights and volumes of reacting substances and products of reaction with the help of equations.
15. **Equivalent weight** :  
 (i) definition.  
 (ii) method of determination of equivalent weight of zinc, copper and magnesium (detailed description not necessary).

- (iii) simple calculations of equivalent weights.
- (iv) relation between equivalent weight, atomic weight and valency.

**16. Normal and decinormal solutions :**

- (i) definition.
- (ii) illustration—hydrochloric acid, sulphuric acid, sodium hydroxide and sodium carbonate.
- (iii) acidimetry and alkalimetry, use of methyl orange and phenolphthalein as indicators—titration:
- (iv) simple calculations based on acidimetry and alkalimetry.

**17. Carbon :**

- (i) Allotropy (only definition and illustration).
- (ii) Allotropic forms of carbon—their properties and uses.

**Carbon dioxide :**

- (i) Laboratory method of preparation.
- (ii) Use of Kipp's apparatus in the preparation.
- (iii) Properties and uses.
- iv) Composition.

**18. Sulphur :**

- (i) Preparation in a pure form from natural sources.
- (ii) Allotropy.
- (iii) Preparation of rhombic and monoclinic sulphur—properties and uses.



**Sulphur dioxide :**

- (i) Laboratory method of preparation.
- (ii) properties and uses.
- (iii) bleaching action.

**Sulphuric Acid :**

- (i) Outline of the method of preparation by the contact process (omitting details of manufacture).
- (ii) properties and uses.

**Simple Sulphates—(of sodium, copper, aluminium and iron) :  
alums**

- (i) preparation.
- (ii) properties and uses.

**Sulphuretted hydrogen :**

- (i) Laboratory method of preparation,
- (ii) use of Kipp's apparatus.
- (iii) properties.
- (iv) use in chemical analysis.

**19. Chlorine :**

- (i) Laboratory method of preparation.
- (ii) properties and uses :  
Oxidizing agent. Bleaching action.

**Bleaching powder :**

- (i) Method of preparation (in outline only).
- (ii) Uses.

**Hydrochloric acid :**

- (i) Laboratory method of preparation.
- (ii) Properties and uses.
- (iii) Composition (Volumetric), experimental determination.

**20. Metals and their compounds :**

Preparation of the following metals (only principles of different steps omitting metallurgical details) :—

**Copper** (from copper pyrites).

**Aluminium** (from bauxite).

**Zinc** (from blends).

Galvanizing.

**Iron** (from haematite)—by the blast furnace with a short description of the furnace and the method of working.

Preparation of steel (outline only).

Preparation of wrought iron.

Comparison of the properties of cast iron, steel and wrought iron.

Properties and uses of these metals and of their alloys.

Compounds of metals—their methods of preparation, properties and uses :

- (i) Sodium sulphate.
- (ii) Sodium carbonate (Solvay process).
- (iii) Sodium hydroxide (electrolysis of brine).
- (iv) Lime
- (v) Plaster of Paris
- (vi) Copper sulphate

**Practical Chemistry**

(No practical examination in Chemistry will be held by the Board)

1. Familiarity with Bunsen Burner.
2. Manipulation of glass : cutting, bending, blowing, etc. ; fitting up of a simple apparatus e.g., wash bottle.
3. Laboratory techniques : (i) extraction, filtration, evaporation, crystallization, sublimation. (ii) Separation of ingredients of simple mixtures.
4. Preparation and properties of oxygen, hydrogen, ammonia, carbon dioxide, and hydrochloric acid,

Study of the action of hydrogen sulphide on solutions of salts.

5. Identification of the said radicals—nitrate, chloride, carbonate, sulphate and sulphide ; and

Identification of the metallic radicals—lead, copper, iron, aluminium, zinc and calcium, in salts soluble in water or dilute acids, given singly. Knowledge of a formal scheme of analysis will not be required.

6. Use of standard solutions of acid and alkalis and the indicators methyl orange and phenolphthalein, for determination of strengths (in terms of normality, or weights per litre) of acids or alkali solutions by direct titration.

**N. B.**—Students will not be required to prepare their own standard solutions.

### List of Essential Diagrams

1. Filtration.
2. Distillation (by Liebig's condenser).
3. Sublimation.
4. Composition of Air (burning of Phosphorus).
5. Levoisier's experiment (burning of Phosphorus).
6. Laboratory preparation of Oxygen.
7. Preparation of Nitrogen (from Air, same as 4).
8. Preparation of Nitrogen (laboratory method).
9. Preparation of Hydrogen (from dilute acid).
10. Preparation of Hydrogen (steam or red hot iron).
11. Hydrogen is lighter than air.
12. Purification of water for drinking purposes.
13. Purification of water for laboratory (same as 2).
14. Electrolysis of water.
15. Volumetric composition of water.
16. Electrolysis of conc. hydrochloric acid.
17. Preparation of Ammonia (laboratory method).
18. Fountain Experiment.
19. Refrigerator—principle of.
20. Laboratory preparation of Nitric Acid.
21. Candle experiment—to show that matter is not lost during burning.
22. Landolt's experiment.
23. Van Helmont's experiment.
24. Determination of equivalent wt. of Zinc.
25. Determination of equivalent wt. of Copper.
26. Preparation of  $\text{CO}_2$ .
27. Carbon Dioxide is heavier than air.
28. Fire Extinguisher—principle of.
29. Gravimetric Composition of  $\text{CO}_2$ .
30. Volumetric Composition of  $\text{CO}_2$ .



31. Laboratory preparation of  $\text{SO}_2$ .
32. Monoclinic and rhombic Sulphur.
33. Converter for Contact Process of  $\text{H}_2\text{SO}_4$ .
34. Laboratory preparation of  $\text{H}_2\text{S}$ —Woulff's bottle and Kipp's Apparatus.
35. Laboratory preparation of Chlorine.
36. Laboratory preparation of  $\text{HCl}$ .
37. Volumetric Composition of  $\text{HCl}$ .
38. Blast Furnace.
39. Preparation of  $\text{Na}_2\text{SO}_4$  (Salt Cake process).
40. Preparation of  $\text{Na}_2\text{CO}_3$  (Solvay process)
41. Preparation of  $\text{NaOH}$  (Electrolysis of brine).

## (5) BIOLOGY

### SYLLABUS

(The Board will hold no practical examination in Biology).

The course shall include the following, in addition to the courses on similar topics prescribed for Life Sciences,

<i>Course Content.</i>	<i>Demonstration.</i>	<i>Practical</i>
------------------------	-----------------------	------------------

#### 1. General Principles of Biology.

- |  |   |  |
|--|---|--|
| (1) Outline classification of plants and animals, with common examples | (1) Plant and animal kingdoms by charts, models and actual specimens. | (1) Collection and dry preservation of parts of a plant.                             |
| •  | (2) Methods of collection and preservation of specimens.              | (2) Collection and preservation of life stages of tadpoles or mosquito or butterfly. |

<i>Course Content.</i>	<i>Demonstration</i>	<i>Practical.</i>
(2) Characteristics of living and non-living objects. Difference between plants and animals.		
(3) Interdependence of plants and animals.	(3) Carbon and Nitrogen cycles by charts.	
(4) Structure of a typical plant cell and an animal cell and their functions. Outlines of cell division (amitosis and mitosis) treated in elementary manner (details excluded). Elementary knowledge of cell differentiation into tissues and organs.	(4) Parts of a microscope, structures of cell. Movement of protoplasm. Different types of tissues in plants and animals, by charts and explanation about their functions. Blood film of a fish or a toad.	(4) Drawing of the parts of a microscope and part of a cell.
(5) General notion about evolution, adaptation and heredity (No question should be set from this).		

## II. General features and modes of living of the following Organisms :

(Histology & details of internal organs excluded)

*Course Content.**Demonstration**Practical***A. Plants.**

- |                       |  |   |
|-----------------------|--|---|
| 1. Mustard and Paddy. | Charts, models and <b>actual specimens</b> | Drawing of the specimens mentioned in Course Content. |
| 2. Fern.              |  |   |
| 3. Moss.              |  |   |
| 4. Mucor.             |  |   |
| 5. Spirogyra.         |  |   |

**B. Animals .**

- |                                |  |  |
|--------------------------------|--|--|
| 1. The earthworm.              | Charts, models and <b>actual specimens</b> | Drawing of the external features of the specimens mentioned in the Course Content. |
| 2. The fish (including gills). | Accessory respiratory structures of        |  |
| 3. The toad.                   | Koi, Singhi and                            |  |
| 4. The lizard.                 | Magur. Drawing experiment.                 |  |
| 5. The guinea-pig.             |  |  |

**III. Study of type specimens :****A Plants : Dhatura**

(Histology excluded).

**(1) Root.**

- |  |  |
|--|--|
| Parts of the root and their functions. | Charts, models and <b>actual specimens</b> . Different types of modified roots, by charts and actual specimens. Internal structure of a root. by charts. Experiments on (a) Osmosis and (b) Root pressure. |
|--|--|

<i>Course Content.</i>	<i>Demonstration</i>	<i>Practical.</i>
(2) Stem.		
Parts of the stem and their functions.	Different types of modified stem, by charts and specimens. Internal structures of a stem, by chart. Phototropism and geotropism, by charts and experiments. Ascent of dyes to show conduction.	
(3) Leaf.		
parts of the leaf and their functions.	Different types of leaves, by charts and actual specimens. Internal structure of a dorsiventral leaf, by chart. Experiments on (a) Transpiration. (b) Photosynthesis. (c) Respiration.	Collection and preservation.
(4) Flower.		
Part of the flower and their functions. Pollination and fertilization :	Common flowers, by charts, models and specimens.	Collection and dry preservation.



<i>Course Content</i>	<i>Demonstration</i>	<i>Practical</i>
(5) <b>Fruit.</b>	Different types of fruits, by charts and specimens.	
(6) <b>Seed.</b> Structure and Germination of seeds of—	Different types of germination.	
(a) Gram	Experiments showing conditions necessary for germination.	
(b) Castor,		
(c) Maize.		
Conditions necessary for germination.		
(7) <b>Dispersal of fruits and seeds.</b>	Various examples of dispersal, by charts and specimens,	Collection of specimens.
<b>B. Animals ;</b> (Histology excluded.).	External features of a frog.	Dissection and drawing of the alimentary system of toad.
Gross anatomy of toad and general functions of the organs.	Dissected specimens showing different organ systems. Circulation of blood. Dissected specimen of Guineapig showing different organ systems.	
	Gross anatomy & general viscera of earthworm.	

<i>Course Content</i>	<i>Demonstration</i>	<i>Practical</i>
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#### IV. Organisms in relation to human life.

##### A. Plants.

- (a) Cotton.
- (b) Jute.
- (c) Paddy.
- (d) Coconut.

##### B. Animals.

- (a) Earthworm.
- (b) House fly.
- (c) Mosquito.
- (d) Honey bee.

### (6) MECHANICS

#### SYLLABUS

C.G.S. and F. P. S. Units; Conversion from one set of Units to the other.

**Varieties of motion :** Elementary notions of speed, velocity and acceleration ; composition and resolution of velocities ; Rectilinear motion of the body with constant acceleration ; vertical motion under gravity, Rectilinear motion under gravity up and down a smooth inclined plane.

Elementary notion of mass, inertia and momentum.  
Newton's Laws of Motion.

**Units of force :** Poundal, dyne, relation between mass and weight ; gravitational unit of force.

Composition and resolution of forces, parallelogram of forces.

Moments, conditions for equilibrium of three forces not parallel.

Triangle of forces.

Composition of parallel forces.

Conditions for the equilibrium of three parallel forces.

Centre of parallel forces.

Centre of gravity.

Experimental determination of the Centre of gravity.

Position of the Centre of gravity in the following cases :

- (1) Uniform rod.
- (2) Uniform triangular lamina,
- (3) Uniform lamina of the shape of a parallelogram,
- (4) Uniform Circular disc.

Centre of gravity of two bodies whose individual centres of gravity are known.

Elementary notion of stable and unstable equilibrium.

Elementary knowledge of the following simple machines :—

- (1) Lever (2) Balance (3) Pulley (4) Inclined plane

Mechanical advantages of levers ;

General ideas of work, energy and power ;

Kinetic energy and potential energy ;

Conservation of energy for a freely falling body.

The subject is to be treated mainly experimentally. Students should have a working knowledge of the following mathematical definitions and results, but will not be required to establish any of them :—

**Algebra :** Solutions of the quadratic equation—

$$ax^2 + bx + c = 0$$

**Trigonometry :** Definitions of trigonometrical ratios ; relation between trigonometrical ratios of complementary and supplementary angles ; simple relations between trigonometrical ratios, such as—

$$\sin^2 \theta + \cos^2 \theta = 1$$

$$\tan \theta = \sin \theta / \cos \theta \text{ etc.}$$

Trigonometrical ratios for  $30^\circ$ ,  $45^\circ$  and  $60^\circ$ .

## (7) ADDITIONAL GEOGRAPHY

### PART I

**Physical Bases of Geography. (40 marks)**

(a) **Earth as a Planet :** The size and the shape of the earth. Rotation and revolution of the earth and their effects. Determination of latitude and longitude. Longitude and time. International date Line.

(b) **Lithosphere :**

Crust of earth—rock types. Weathering, Erosion and Deposition—their causes and effects on topography. Detailed study of Rivers and glaciers and their work.



Mountains—their types, structure and distribution.

Volcanoes, earthquakes their origin and distribution.

Types of Plains.

(c) **Hydrosphere :**

Oceans—their extent ; characteristics of Oceanic waters such as salinity, temperature and density. Ocean currents. Tides and their causes.

Topography of sea floor, types of deposits. Lakes—Origin of the different types of lakes.

(d) **Atmosphere :**

Temperature and Pressure and their variations.

Pressure belts and planetary winds.

Periodic and variable winds.

Rainfall—types and their causes.

Weather and climate. Factors determining climate.

Winds (Permanent and Periodical winds). Local winds, e.g. Chinook, Fohn, Loo, Nor'wester Etc.

Cyclones (Tropical and Temperature) and Anti-cyclones.

Major Climatic types.

**Practical**

(No Practical Examination in Geography will be held by the Board)

Local Weather observation. Reading of thermometer—maximum and minimum. Determination of humidity—Dry and Wet Bulb method only. Use of Wind vane, Rain gauge and Barometer. Drawing of graphs showing temperature and rainfall of different climatic regions Drawing of Contours. Study of Simple geographical features from topographical sheets.

## PART II

### Geography of the World (60 marks)

- (1) Major Natural Regions of the World—Human and Economic conditions in these regions.
- (2) Outline of the Geography of the continents :
  - (a) Physical features, Climate, Natural vegetation, Agriculture, Minerals, Industries, Transport, Political Divisions, Exports and Imports, Towns and Cities. No detailed study of political division is required.
  - (b) Major International Routes—Airways, Waterways.
  - (c) World distribution of Rice, Wheat, Sugar, Cotton, Coal, Iron Ores, Wool, Jute, Tea and Petroleum.

## (8) OUTLINES OF WORLD HISTORY

### Chapters

- I. The Age of Revolution (with emphasis on three major factors influencing 19th century and later history .
  - (i) The American War of Independence;
  - (ii) The French Revolution and Napoleon I (without details of military incidents of the Revolutionary and Napoleonic Wars).
  - (iii) The Industrial Revolution.
- II. The Vienna Settlement, 1814-1815—The Metternich System—The Concept of Europe.
- III. Revolutions of 1830 and 1848 in France and their repercussions elsewhere.

- IV. The Second French Republic—The Second Empire—Napoleon III's work at home and abroad.
- V. The unification of Italy with special reference to Cavour.
- VI. The unification of Germany with special reference to Bismarck.
- VII. Russia in the Second half of the 19th century—From Tsar Alexander to the accession of Nicholas II.
- VIII. The Eastern Question (1852-1919) (The background to be traced in outline from the War of Greek Independence).
- IX. The Expansion of Europe in Africa and Asia from the middle of the 19th century upto World War I.
- X. The Age of Armed Peace (1871-1914)—Causes of friction among the great powers, esp. France, Germany, England, Russia and Austria—Division into the hostile camps—The Situation in the Balkans.
- XI. World War I (without details of military history)—Peace Settlement—The League of Nations
- XII. American Civil War—U.S.A. in the Far East (1899-1921).
- XIII. China and Japan from the middle of the 19th century to 1931.
- XIV. Russian Revolution—Establishment of USSR—its effects at home and abroad.
- XV. Rise of Fascism and Nazism—Revisionist offensive by Italy, Germany and Japan.
- XVI. Causes of World War II U.N.O.
- XVII. Nationalism in Turkey, Arab countries, India and South East Asia—Awakening of Africa.



## (9) LOGIC

### CLASS IX

1. What is Logic ? A general introduction. Subject matter of Logic ; Reasoning and inference,
2. What is Inference ? Nature of Inference. Terms, Propositions and Inference.
3. What is a Term ? Distinction between Terms and Words.
4. Denotation and connotation of a Term and their relation.
5. Division of Terms :
  - (a) Simple and Composite
  - (b) Univocal and Equivocal
  - (c) Singular and General
  - (d) Collective and Non-collective
  - (e) Concrete and Abstract
  - (f) Positive, Negative and Privative
  - (g) Absolute and Relative
  - (h) Connotative and Non-connotative
  - (i) Contrary and Contradictory.
6. Are Proper Names Connotative ?

### CLASS X

1. Logical Definition. Distinction between Definition and Description. Limits of Definition. Rules and conditions of Definition. Testing Fallacies.
2. Division. Distinction between Division and Definition. Limits of Division. Division and Physical Partition. Rules of Division. Testing Fallacies.



3. What is a Proposition ? Distinction between Propositions and Grammatical Sentences. Three parts of propositions—Subjects, Predicate, Copula, Nature of Logical Copula.

4. Predicables—Genus, Species, Differentia and Accidents.

5. Classification of a Proposition :—

(a) Composition (c) Relation.

(b) Quality (d) Quantity

Four-fold Scheme of Propositions—A. E. I. O.

6. Transforming Sentences into Logical Propositions.

7. Inference—its two types—Deductive and Inductive, Formal and Material.

## (10) PSYCHOLOGY

1. Psychology—a study of mind and behaviour. Experience analysed. Subject-matter of Psychology distinguished from subject matter of Natural Science.

2. Uses of Psychology in different fields of life—Education, Clinical Sphere, Industry and vocation, Social Sphere.

3. Physiological basis of mental life, Central Nervous System.

4. Human behaviour—Motives, Needs and Drives, Instincts.

5. Feelings and Emotions—their nature, Fear, Anger, Love.

6. Perception—gateway to knowledge of the outer world. Perception is sensation plus meaning. Gestalt's view. Types of Perception—Visual, Auditory etc. Errors in Perception, Sensation—Sense organs. S-O-E formula.

7. Learning—Conditioning, Trial and Error, Insight.
8. Remembering—Factors of Memory analysed—Learning Retention, Recognition and Recall, Economy in memorizing Forgetting.
9. Attention and Interest - Nature and Conditions of Attention—Types of Attention.
10. Elements of Statistics—Frequency Polygn, Mean, Median and Mode. Average Deviation and Standard Deviation. Rank—difference—correlation.
11. Methods of Psychology—Introspection, Observation and Experiment.

In explaining the Central Nervous System stress should be given by teachers on the evolution of brain in animals.

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## **(11) BUSINESS METHOD AND CORRESPONDENCE**

### **Syllabus**

1. Business subdivisions into industry, trade and commerce.
2. Different methods of business organization—Individual—Proprietorship—Partnership—Joint Stock System—Kinds of Joint Stock Companies.
3. Internal Office Organization—Receipt of Letters, Money Orders, Remittance etc.—Cash Department—Accounts Department—Purchase Department—Sales Department—Type Section—Despatch Section—Record Section.

4. Office procedure—Treatment of incoming letters—Letter Registers, Docketting—Precis writing—Office Notes—Preparing replies—Preserving copies—Filing and Indexing.
  5. Commercial Correspondence—Characteristics of business letters.
  6. Various modern office appliances and labour-saving devices.
  7. Usual business forms—Receipts, Payment vouchers—Cheques—Pay-in-Slip—Invoice—Bills for goods supply—Debit and Credit Notes.
  8. Usual Books and Registers maintained in Commercial Office—Cash Book—Ledger—Journal—Stock Register—Bill Register—Employee's Attendance Register and Service Records.
  9. Banks—Definition—Current A/c.—Fixed Deposit—Call Deposit—Over-draft Hypothecation of goods.
  10. Elementary knowledge regarding booking of goods by common carrier including rail, steamer and ship.
  11. Provident Fund, Gratuity, Bonus, Co-operative Societies.
  12. Insurance - Fire Insurantee—Marine Insurance—Fidelity Guarantee Bond—Cash-in-transit Insurance—Workmen's Compensation—Employees State Insurance.
- N B.—Only elementary (and not detailed) knowledge regarding the above items is required.
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## (12) BOOK-KEEPING

### Syllabus

1. Definition of Book-keeping—object of Book-keeping.
2. Principles of Double-Entry system :
  - (A) Rules for Debit and Credit.
  - (B) Classification of Accounts.
    - (1) Personal
    - (2) Impersonal.
      - (a) Real or Property.
      - b) Nominal or Gain or Loss.
3. Books of Accounts or Financial Books :
  - (i) Books of original entries :
    - (a) The Cash Book—Cash and Bank columns.
    - (b) The Purchases Book.
    - (c) The Sales Book.
    - (d) The Purchases Returns Book or Returns Outward Book.
    - (e) The Sales Returns Book or Returns Inward Book.
    - (f) Journal.
  - (ii) Principal Book of Accounts :
 

Ledger—General or Nominal Ledger—Personal Ledger—their inter-relation.
4. The Trial Balance objects.
5. Final Accounts :
 

Trading, Profit & Loss Account—Balance-sheet.

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# (13) ELEMENTS OF ECONOMICS AND CIVICS

## (A) ECONOMICS

### CLASS IX

1. The nature of economic activities.
2. Economic activity of the household—Consumption.
3. Production—the concept of the firm—classification of factors of production and their earnings.
4. Classification of firms : Single-ownership, Partnership, Joint-Stock Companies.  
Co-operation—different type of co-operative societies.  
Small scale and large scale production.

### CLASS X

5. The Market.  
Demand and Supply—Elastic and Inelastic demand—Elastic and Inelastic supply—Price and output of the firm under perfect competition and under monopoly.
6. Money—functions of money—Description of the Banking system (commercial and central banking).

## (B) CIVICS

### CLASS IX

1. The individual and society man as a social animal—the family and its function.
2. The State and Society—the State and other Associations—characteristics of the State.
3. The citizen—qualities of a good citizen—hindrances to good citizenship.
4. Rights and duties—the right to vote and its importance.
5. Nation and Nationalism.

## CLASS X

1. Constitution—forms of Government—Democracy and Dictatorship—merits and demerits of Democracy—Unitary and Federal Government Parliamentary and Presidential Government.
  2. Organs of Government—separation of powers.
  3. Functions of Government.
  4. Law and Liberty.
  5. Political parties.
  6. Local Self Government.
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## (14) HOME SCIENCE INCLUDING HOME NURSING

( Also for External Candidates )

(Home Science—80 marks ; Home Nursing—20 marks)

## CLASS IX

## HOME SCIENCE

### Syllabus

#### The House :

Sanitation of the house—the waste matter and its disposal.

Air—A simple study of the composition of air—simple methods of detecting oxygen and carbon-dioxide.

Impurities in the air. A detailed planning of the house—kitchen, laundry, nursery, the bed room and the living room. House decoration—importance of good taste—a simple study

of balance, proportion and harmony and their application in decoration. Decoration of different rooms for different purpose. 'Alpana' in different provinces.

### **Health and Home :**

Your own body—teeth, eye, ear, hair and skin—their health and care—cleanliness. Rest and exercise—good posture, and personality. Health habits—in eating, drinking, sleeping, breathing and bathing.

Food—digestion of food, enzymes. Planning of special diets—diets for babies, pre-school and school children and the aged. Diet for hard labour. Cooking and preservation of vitamin—effect of heat on different food constituencies. Menu making.

Cloth and clothings—variety of clothes of different materials, uses and importance of clothing, care of clothings. Laundering—washing and finishing of artificial silk. Different types of stains and their removal—ink, rust, grease, blood, tea, perspiration, fruit and curry stains.

## **HOME NURSING**

**The Nurse :** her duties to herself and to the patient.

**The Sick-room :** choice of the room and its arrangement, and bedmaking with and without patient, collection and preservation of the materials used by the sick (viz. linen, utensils, hot-water-bag, ice-bag, mackintosh, etc.).

**First Aid :** simple bandaging, storage of poisonous medicines,

**Accidents and emergencies :** sprains and fractures ; pain, cuts, bleeding, street accidents, foreign bodies, bites and stings, fits and fainting.

**Activities in the Class Room :**

Plan the daily menu. Clean your clothes and remove stain. Convert one of the school rooms into a living room and decorate it. Decorate your school corridor with a simple alpana design.

Arrange flowers and observe the principle of harmony, balance and proportions. Prepare egg flip, boiled custard caramel, custard-pudding, banana custard, baked apple. Prepare vegetable and fish stew, brown stew, fried rice.

Practical work in connection with Home Nursing and First-aid.

**CLASS X****HOME SCIENCE**

(The work during this period would be mostly revision work)

**The House :**

The business of the house—detailed study of family income and budget making—provision for future—importance of savings—Savings Bank, Post Office and Insurance Policy—household account.

House decoration—different house plans and their designs. Interior design and arrangement of pictures and wall hangings. Making the best of one's possession—elimination, rearrangement, concealment. Household repairs—simple fuse and furniture repairs.



**House Management :**

Food—planning of diet to be continued. Deficiency diseases—modification of diet in disease, control of diet in obesity and under-weight. Best use of food with some aspect of food economics. Adulteration of food and simple tests. Cooking of food and preservation of food value—general principles of preparing diet for the sick, the infants and the aged. Planning meals for different occasions and preparing menu.

Cloth and clothing. Clothing and health—errors in clothing—choice of clothes for women—different dress designs, colour in dress. Children's clothes.

Laundering—a study of different textile fibres—cotton, linen, rayon, wool, silk and metal fibres—their properties and reaction to acid and alkalis. Different processes of washing and finishing materials of different texture—organdi, georgette, crepe-de-chine.

**HOME NURSING**

Nursing of the patient. Care of the mouth and bowels. Care of the back. Care of the hair. Care of the nails. Sponging high fever, temperature taking and administration of drugs.

Infectious Diseases. Germs. Elementary knowledge of signs and symptoms of diseases. Savings of urine, stools, vomits etc. Isolation, notification and prevention. Disinfection of room and materials. Epidemics. Inoculation and vaccination.

Young mother—her responsibility to herself and to her child.

**Activities in the Class Room :**

Prepare menu for light refreshment and a dinner. Wash and finish a coloured tasar sari, a crepe blouse, one georgette frock with frills, silks shirt and panjabi, Convert one of your school rooms into a bed room, another into a study—plan and decorate each, use curtains and flowers and wall pictures wherever necessary. Prepare Potato and Shami Kabab—Fish chop and Meat-cutlet Stemed fish—Daccai paratha—Singara and Nimki—Kochuri—Malpoa—Pantua—Coconut sweets—Vegetable salad—Stewed apple.

Practical work in connection with Home Nursing and First-aid.

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**(15) MUSIC—VOCAL**

Theoretical	...	40 marks
Practical	...	60 marks
		<hr/>
		100 marks

**SYLLABUS**

Voice and ear training : simple ear tests such as will help to recognize any note of the scale, the key-note being given.

Alankar Sadhan : Definition of the technical terms of Music, elementary theory of Swaras, Ragas and Raginis.

Dandamatric and Akarmatric notation : reading and writing of simple notation.

One Bengali or Hindusthani song in each of the following Ragas and Raginis : with common Alap, Swaravistar, Bole vistar, Dwigun (Boat) and/or Tan and Tehai etc :—

Bilawal, Khambaj, Iman, Kafi, Behag, Desh, Bhairabi, Bagesri, Bhairon, Purabi, Asabari, Bhupali and Malkosh.

Three of the songs must be in Dhrupad style.

The above Ragas and Raginis in any of the following Talas. Tetala, Ektala, Chautala, Jhamptala, Teora, Surphanktala.

Each of the above Talas with Matras, Division and Bani is to be learnt so as to be able to demonstrate correctly with beating of hands with or without the accompaniment of percussion instruments.

One song from each of the following :—

- (1) Old Style Bengali Song.
- (2) Folk Song.
- (3) Bhajan.

One Kirtan in Lopha and one in Jhamp.

Tuning of the Tanpura.

Three songs of Rabindranath, of which one must be in Dhrupad style and others in his characteristic style.

“Jana Gana-Mana-Adhinayaka” and “Bande Mataram.”

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## (16) MUSIC—INSTRUMENTAL

Stringed Instruments —SETAR, SARODE, ESRAJ Or VIOLIN

Or Wind Instrument —FLUTE

Or Percussion Instrument —TABLA, PAKHOAJ Or KHOLE

(a) SETAR OR SARODE	Theoretical	...	40 marks
	Practical	...	60 marks
			<hr/> 100 marks

A candidate will be trained and examined in only one of the above instruments.

**Practical :**

- (1) Knowledge of the description of the instrument.
- (2) Handling of the instrument ...
  - (a) Asana (Sitting posture)
  - (b) Manipulation of hands and fingers.
- (3) Bol Sadhan (Vani exercises).
- (4) Alankara Sadhan on different Thats (Swara exercises).
- (5) Demonstration of Tritala in the respective instrument without the help of any percussion instrument.
- (6) Ear training : Simple ear tests.  
Tuning of the instrument to be done.
- (7) Demonstration of (a) Aroha, Avaroha ;  
(b) Chalan ;



(c) Rezakhani Gat, Toda and Jhala set in Tritala in each of the following Ragas :—

Iman, Bilawal, Khambaj, Kafi, Bhairabi.

- (8) Tunes with notation and full text of the National Anthem :—"Jana-Gana-Mana-Adhinayaka."

### Theoretical :

- (1) Definition of Swaras.
- (2) Definition of Ragas —Definition of Sthayi, Mudara, Antara.
- (3) Definition —Sangeet, Saptak, Meend, Kan Ghaseet, Laya, Matra, Tala.
- (4) Akarmatrik and Hindusthani paddhati notation :  
Reading and writing of simple notation.
- (5) Life sketches —(a) Nayak Gopal  
(b) Mian Tansen.

Or

(b) ESRAJ, VIOLIN OR  
FLUTE

Theoretical	40 marks
Practical	60 marks
	<hr/>
	100 marks

A candidate will be trained and examined in only one of the above instruments.

### Practical :

- (1) Knowledge of the description of the instrument.
- (2) Handling of the instrument
  - (a) Asana (Sitting posture)
  - (b) Manipulation of hands and fingers.

- (3) Alankara Sadhan on different Thats (Swara exercises).
- (4) Demonstration of Tritala in the respective instrument without the help of any percussion instrument.
- (5) Ear training : Simple ear tests.  
Tuning of the Esraj or Violin to be done.
- (6) Demonstration of
  - (a) Aroha, Avaroha ;
  - (b) Pakad ;
  - (c) Chalan ;
  - (d) Madhya laya Gat with Tans and Jhala set in Tritala ; Ektala and Jhamptala to be played on the instrument in the following Ragas :—  
Iman, Bilawal, Khambaj, Bhairabi, Kafi.
- (7) Tunes with notation and full text of the National Anthem :—"Jana-Gana-Mana-Adhinayaka."

**Theoretical :**

- (1) Definition of Swaras.
- (2) Definition of Rags
- (3) Definition —Alap, Gat, Sangeet, Saptak, Sthayi, Meend, Sut, Chhut, Zamzama, Laya, Matra, Tala Talj, Khali, Tehai.
- (4) Akarmatrik and Hindusthani paddhati Notation :  
Reading and writing of simple notation.
- (5) Life-sketches —(a) Nayak Gopal  
(b) Mian Tansen

**Or**

(c) TABLA, PAKHOAJ	Theoretical	40 marks
OR Khole	Practical	60 marks
		<hr/> 100 marks

A candidate will be trained and examined in only one of the above instruments.

**Practical :**

- (1) Method of sitting for playing Tabla, Pakhoaj or Khole.
- (2) Practice of BANI by both the hands.
- (3) Knowledge of LAYA—Practice of maintaining the LAYA by Clapping in Matra.
- (4) Practice in Vilambit, Madhya and Drut Laya and also practice in Dun, Trigun, Chowgun etc. with Matra.
- (5) Vilambit, Madhya and Drut thekas of the following talas :—

for Tabla	—Tritala, Kaharwa, Dadra ;
for Pakhoaj	—Chowtala, Teora ;
for Khole	—Daspahira, Lofa.

- (6) Practice of four kinds of PARAN, RELA and TEHAI of Kaharwa and Dadra and also PRAKARANTRA (another sort of) Thekas.
- (7) Lahara of Tritala —for Tabla  
Lahara of Chowtala —for Pakhoaj  
Lahara of Daspahira —for Khole
- (8) Accompaniment with vocal and instrumental music.
- (9) Knowledge of Thekas, of the following Tals :  
for Tabla —Trital (Vilambit), Ektala, Addha ;  
for Pakhoaj —Surphanktala, Dhamar ;  
for Khole —Chhota, Daskoshi and Dothuki.

**Theoretical :**

- (1) Definitions of the following terms :  
 Talalipi, Theka, Thhay, Dun, Trigun, Chowgun, Adi.  
 Laya, Matra Som, Tali, Khali, Tehai, Paran, Sangeet  
 Abarta, Bani, Vilambit, Madhya, Drut, Alankar,  
 Chhanda, Samapadi' Bisamapadi.

That, Lahar, Murchhan—these three specially for  
 KHOLE.

- (2) Practice in writing with necessary signs of distribution,  
 all the Thekas of the Talas which are included in the  
 Practical Course.
- (3) Description of Tabla and Baya, Pakhoaj or Khole.
- (4) Process of writing the Thekas in Vishnu Digambar  
 and Vishnu Narayan Bhat Khande Paddhati (System)  
 —for Tabla and Kirtananga Paddhati —for Khole.
- (5) Short life-sketches of the following :—

(i) Prasanna Banik

and

Ata Hossain

... TABLA

(ii) Nagendranath Mukhopadhyay

and

Durlabh Bhattacharya

... PAKHOAJ

(iii) Nabadwip Chandra Brajabasi

and

Nikunja Behari Mitra

... KAOLE



## (17) ELEMENTS OF INDIAN ART

## Chapter

## Contents

- I. Man's awareness of art and beauty—primitive man's attraction towards flowers—coloured stones—polishing of stone implements—paintings on rock walls at Singhanpur—Harappan tradition—the line stone figure—male torso—dancing male figure, bronze dancing girl—terracotta figures—seals—painted pottery.
- II. Asoka—the Pillars and the animal figures—the stupa railing figures of Bharhut—Bodhgaya—Torana panels of Sanchi—rock sculpture and Caves of Udayagiri (Orissa) and Bhoja.
- III. Sculpture of Gandhara—influence of Hellenistic and Persian art—Mathura and Amaravati—The birth of the image of Buddha—Form and character of the figures.
- IV. Gupta age : Composition and analysis of the Buddha image : Images of gods and goddesses : Beginnings of temple architecture.
- V. Pala Sena art or Bengal—The Sultanganj Bronze image of Buddha : birth of the regional schools : Paharpur sculpture—Pratima or image : Stone and bronze sculpture.
- VI. Pallava Rock-cut sculpture of Mahabalipuram—Ellora—Badami—Chola Bronzes—Hoysala baroque art,
- VII. Paintings of Ajanta : Technique and Style—Bagh : Ellora : Sitannavasal—Miniature paintings of Bengal and Gujarat.

**Chapter****Contents :**

- VIII. Mughal Painting :  
 Rajasthani Painting .  
 Pahari Painting.
- IX. Story of Indian Temples—North Indian style—  
 Parasurameswar : Rajarani—Lingaraj : Konarak :  
 Kandaryamahadeva at Khajuraho—South Indian  
 Style : Rathas of Mahabalipuram ; Shore Temple :  
 Temples at Kanchipuram—Vrihadisvara at Tanjore.
- X. Story of Indian art outside India : South East Asia —  
 representative temples and sculptures of Ceylon,  
 Burma—Java and Cambodia : Banner painting and  
 Bronze figures of Nepal and Tibet connections with  
 Central Asia—China and Japan.

**(18) ELEMENTS OF JOURNALISM**

(To be introduced in Class IX from 1977)

For CLASSES IX & X

**Distribution of marks :**

Written	...	...	80 marks
Sessional	...	...	10 marks
Oral Test	...	...	10 marks
			<u>100 marks</u>

## PART—A

### (News)

#### Chapters :

- I. What is news ? Its characteristics ; illustrations Variety of news : Educational, Political, Economic, Social and Cultural etc. Illustrations.

Pictorial news and Cartoon : their significance and Impact : illustrations. News & Views—features—Editor, Special articles.

- II. Sources of news —Official and unofficial—illustrations, News Agencies ; Press Releases and Press Notes.

## PART—B

### (Principles of Journalism)

- III. What is journalism ? Principles of journalism —its elaboration. Ethics of journalism. Essential qualifications of a journalist.
- IV. History of journalism with special reference to India. Life sketches of a few pioneers : Freedom of Press—illustrations.
- V. Different sections of journalism : reporting, feature editing, photo journalism and cartoon.

## PART— C

### (News papers)

- VI. What is a newspaper ? Kinds of newspapers.
- VII. Components of a newspaper organisation. Journalists and non-journalists. Different stages of publication :



Composing, lay-out, dummy, caption, strip, block, stereo, mat., cold and hot type, lino, store-room printing and proof-reading.

## PART -D

VIII. Media of Mass-communication - illustrations : Radio & Television, Film.

IX. News-media and the public.

Page limit : 160 covering all the Chapters and Photographs.

## (19) PHYSIOLOGY AND HYGIENE

(Additional Subject for External Candidates Only)

### Syllabus

Candidates are expected to realize the great need for study and practice of hygiene in a country with low longevity, high incidence of preventable diseases, low working capacity and high incidence of maternal and infant mortality. They are expected to possess a conception of physiological basis of the function of the human body as also just as much elementary knowledge of anatomy, chemistry, physics and other allied subjects as may be essential for the proper understanding of the subject.

1. Definition of Hygiene. Hygiene and body activity. Promotion of health and working capacity through Physical education. Personal hygiene. Application in daily life of all rules of health and teachings of Physiology.



2. Position of man in Biological Tree. Elementary Anatomy of the human body—definition of cells and tissues of the body.

3. Food – Principles of dietetics ; digestion, absorption and assimilation.

Path and fate of food in body ; Mouth – teeth – temperature of food – tongue – taste – saliva (Ptyalin). Pharynx (throat), oesophagus food pipe), stomach – its secretion. Digestion – small-intestines – succus entericus – bile, secretion from liver, pancreatic juice – their effects on protein – fat – carbohydrate. Absorption of water and digested material. Large intestine and its functions.

Rectum – fecal matter – evacuation – anus.

Notes on appetite – hunger – thirst – vomiting.

4. Food—its proximate principles and their respective function—the importance of each in relation to growth and maintenance of health—activity—longevity. The value of milk and milk products—nutritive value of food—minimal dietary standard—dietary planning and food costs—food adulteration—food in relation to disease and different ages. Prevention of pollution of cooked food at home and eating houses—healthy eating habits—time—quality—quantity—temperature—selection—preservation—preparation—cooking—sources of different ingredients. Beverages.
5. Blood—its functions and circulation. Blood—Red blood cells—White blood cells—Platelets—plasma—coagulation of blood—circulation of blood—organs concerned—Heart—its chambers—Heart-beat—Pulse. Exchange of gases in lungs.

6. Respiratory system: Path of air—nostril—throat—trachea, bronchus — bronchioles —air—sac—lungs—pleura.

Respiration—mechanism of breathing—rate—inspiration ( $O_2$ )—expiration ( $CO_2$ )—composition of air—importance of air to life. Respiration during rest and work.

Function of lungs—exchange of gases—elimination of  $CO_2$  and moisture. Droplet infection—common respiratory diseases—ventilation—natural and artificial. Need for fresh air and of space per head.

Notes on spit, phlegm, vital capacity and evils of mouth breathing, artificial respiration.

7. Kidneys—location—ureter—bladder—urethra. Elimination of waste products—urine and its formation.
8. Skin. Hair follicle—pores—sebaceous and sweat-glands—pigments (complexion). Functions—protective—regulation of body temperature—perspiration—sensation—reaction to sun's rays—Vitamin D.
9. Nerves—motor and sensory—reflex action. Elementary knowledge of sight, hearing, taste and smell.
10. Body—mechanism—posture—effects of posture on health—posture in school—while sitting, standing and walking.
11. Environment :—(a) What is meant by environment—cleanliness defined—cleanliness of body—clothing—home—school and play ground—tanks—dobs. Rust—smoke—bacteria.

(b) Essential features of good environment.

(i) Sunlight—Health. Protection from over-exposure.

(ii) Air—the relation of weather and outdoor air to health—indoor air and health—harmful constituents of outdoor and indoor air—ventilation—external ventilation (streets, park and open spaces)—mechanical ventilation—bad effect of overcrowding—common air-borne diseases—natural purification of air, air-conditioning.

(iii) Soil—soil as man's efficient scavenger—diseases transmitted from soil—methods of prevention.

(iv) Vegetable kingdom—very important source of food—of medicine. Its influence on atmosphere.

(v) Water—important constituent of body—thirst—water and other drinks—water in relation to health—hard and soft water—safe drinking water—natural purification of drinking water.

Sources of water—rain—surface—spring—ground. Usual sources in Bengal—tanks, wells, tube-wells, streams—how to avoid pollution of each.

Common methods of purification of water—household methods—boiling—use of chemicals.

Storage and distribution of water in houses and institutions—domestic, social and national ceremonies—melas in villages and towns. Prevention of pollution—individual responsibility—community responsibility—water-borne diseases.

(vi) Elements of dwelling house and disposal of household refuse, animal and human excreta.



12. Definition of communicable diseases—sources, modes of spread and prevention :

- (i) Man-‘Droplet’ Infections—human carriers.
- (ii) Water and food—as sources of infections.
- (iii) Insects—as transmitters of diseases—prevention of breeding and control of common disease-bearing insects, Anti-mosquito and anti-fly measures.
- (iv) Animals as sources of infection for man.
- (v) Notification.
- (vi) Quarantine and Isolation—different types of isolation.
- (vii) Natural immunity—Immunization (Cholera, Typhoid, Diptheria, Small Pox, Tetanus, Tuberculosis, etc., as examples).
- (viii) Sanitation : (a) A good system of removal of refuse and waste disposal—water carriage system—septic tank—direct disposal of sewage—trenching—incineration—compost.  
(b) Common methods of disinfection of rooms, bedding, clothes, excreta, and other infected materials ; concurrent and terminal disinfection.
- (ix) Health Education—individual and Community Public Health Laws.

13. Community Health Problems with special reference to Tuberculosis, Leprosy, Malaria, Cholera and Filaria.



## CHAPTER IX

### ADDITIONAL VOCATIONAL SUBJECTS

(Only for Regular candidates).

#### (1) SEWING AND NEEDLE WORK

The examination on the subject will be both practical and written.

GROUP A—30 marks.

**Theoretical :** ( 1 hour ).

Questions will be set on the following :

- (1) Suitable materials for garments, hygienic qualities.
- (2) Drawing a diagram to scale of any simple garment.
- (3) Cutting out of garments and their construction and the various stitches to be employed in them.
- (4) Suitable designs for embroidery on various garments—patterns, colours, threads, stitches.
- (5) Patching, darning, general repairs.
- (6) Sewing machine—Uses of different machine parts and care of the machine.
- (7) 'Kantha' work.
- (8) Knitting—Methods of and materials used in—
  - (a) Baby Suit : top, socks, coat.
  - (b) Socks on 4 needles.
  - (c) Sleeveless Pull-over.
  - (d) Simple blouse with short sleeves.

**GROUP B**—50 marks (of which 17 marks will be essential for a pass).

**Practical :** ( 3 hours )

Each candidate may be required to cut out, from given measurements any garment or the section of a garment specified in the following list and to tack together or make such portions as may be indicated at the time of examination :—

- (1) Child's jangiya—1 year.
- (2) Child's knickers—2 to 10 years.
- (3) Child's romper—2 to 4 years
- (4) Child's plain frock—6 to 10 years with yoke.
- (5) Simple blouse with short attached sleeves.
- (6) Petticoat—Half. (For girls aged 12).
- (7) Half shirt—6 to 8 years.
- (8) Panjabi—6 to 10 years.

**N.B.**—Candidates must bring with them to the practical examination a ruler, a red and blue pencil, cotton, needles, pins, a thimble, scissors and a tape measure, and to the theoretical examination, a ruler and a pencil.

The necessary materials will be provided by the Board.

The help of a sewing machine may be employed if so desired in making half shirt and child's knickers

**Embroidery & Stitches :**

- (1) Kashmiri.
- (2) Gujarati and Kathiawari.
- (3) Koshida or Daccai.
- (4) Drawn thread.
- (5) Richelieu or cut-out embroidery
- (6) Applique.
- (7) Punch work.

- (8) Button-holding, to make button holes and eye-holes.
- (9) Beading.
- (10) Smocking and honey-comb.
- (11) Stain stitch.
- (12) Feather stitch.
- (13) Chain and Fly stitches.
- (14) Shadow work.
- (15) Herring Bone.
- (16) French knots.
- (17) To design letters and monograms in English and Vernacular, in cross-stitch and stain stitch.

GROUP C—20 marks

**Prepared work to be submitted :**

- (1) Child's frock with smocking or honey-comb—age 4 years.
- (2) Blouse with embroidery—chest 32 inches.
- (3) Panjabi—6 years.
- (4) Samples of patching and darning on cotton.
- (5) Piece of cloth, with samples of the following stitches worked for 4 inches each :
  - (a) Kashmiri.
  - (b) Beading.
  - (c) Daccai Embroidery or, Koshida.
  - (d) Drawn thread.
- (6) A piece of crochet lace or tatting, 6 inches long.
- (7) Simple knitted blouse (chest 32 inches) with short sleeves attached

**N. B.**—All prepared work submitted by a candidate regarding the practical examination at the Board's Final Examination must be accompanied by a certificate from the teacher guaranteeing that the work has been done by the candidate herself.



## (2) ELEMENTS OF AGRICULTURE AND HORTICULTURE

### Syllabus

- 1 **Introduction**—Agriculture and its importance.
2. **Soils**—Formation of Soil—description of Soil in West Bengal—sand, loam, clay, silt etc., and their characteristics—Conservation and improvement of Soil fertility.
3. **Cultivation**—Tillage, sowing cultivation, harvesting—description and uses of different kinds of farm implements.
4. **Manures and fertilizers**—Different forms, including composts and green manures—their properties and uses
5. **Irrigation and drainage**—Its objects—different methods and appliances used.
6. **Enemies of crops**—(a) weeds, (b) common pests. (c) common diseases - methods of their control and eradication. Protection against—cattle and wild animals.
7. **Rotation of crops**—Its principles and practice.
8. **Crops and vegetables in West Bengal**— i) Their classification and importance—description of common crops rice, wheat, barley, maize, pulses, oil seeds, jute, cotton, kapok (শিমূল), sugar-cane, potato, brinjal(বেগুন), patol (পটল), lau (লাউ), kumrah (কুমড়া), jhinga (ঝিঙা), uchche (উচ্ছে), karalla (করলা), sheem (সীম), barbati (বরবটী) shak (শাক), cabbage, cauliflower, peas, beans, radish (মুলা), carrot (গাজর), turnip (শালগম), chillies (লঙ্কা), beet—sowing calendar of West Bengal.  
(ii) Utilization of crops like sugar-cane, palm, mustard.
9. **Horticulture**—Its importance—common fruits of West Bengal—their seasons and propagation methods - common hedge plants and trees ; Flowers—seasonal and perennial—common flowers in West Bengal.



10. **Fodder crops** and their importance.

11. **Care and Management** of farm animals.

**N. B**—Instruction should be given through a text-book covering not more than 200 pages and through demonstration on the field and excursions. Pupils' acquaintance with practice of agriculture should be primarily insisted on.

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### (3) PISCICULTURE

1. Fisheries—different types—inland and marine—tanks, beels and rivers, bheris and paddy fields.

2. Fish—Broad classification and characteristics—common fish of West Bengal.

3. Culture of— a Life history of major carps and care at different stages of their growth. The term "major carps" includes certain classes of fish—such as, Mrigel, Rohit, Katla and Kalbosh.

b) Factors conducive to life and growth of fish—bottom soil, water and its properties—food, manures and fertilizers and helpful vegetation and insects, etc.

(c) Breeding season and preservation.

4. Enemies of fish and their control—Common diseases—defective ponds, harmful vegetation, predatory fish and animals—remedial measures.

5. Ideal fish farming—Nursery rearing tanks—assessment of requirements of spawns, fry and fingerlings—care and management—outturn.

6. Marketing and distribution—Methods of catch and preservation—transport and sale—by-products and uses of fish wastes.

**N.B**—Pupils are expected to have some first hand acquaintance with the practice of pisciculture.

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#### (4) ANIMAL HUSBANDRY INCLUDING POULTRY FARMING

1. Introductory—Importance of livestock.
  2. Different livestock—their general description and utility—cattle, buffalo, goat and pig.
  3. Life study of cattle—Pedigree, rearing of calves, age determination, castration, lactation, gestation and dry period.
  4. Population breeds of cattle in India—suitable breeds for West Bengal—principal points for selection. Improvement of local breeds of cattle.
  5. Care and management of cattle — i Feeding—suitable food—roughages — concentrates — silages — digestive system.  
(ii) Feeding of milch animals—dry animals—bullocks and stud bulls.
  6. Housing of Cattle —(i) Cattle shed.  
(i) Conservation and utilisation of dung and urine.
  7. Common diseases and their control.
  8. Dairying—milk and milk products—(a) Definition of milk, (b) composition of milk, (c) properties and general characteristics of milk, d) factors affecting quantity of milk (e) clean milk production (f) milk recording, (g) milk testing, (h) milk separation, (i) elementary lectures on butter, ghee, dahi and chhana (j) contamination and its prevention (k) preservation.
  9. Poultry—Elementary lectures on poultry  
(A) (1) Important breeds of fowls and ducks, (2) feeding. (3) housing, (4) hatching— natural and artificial, (5) care and management, (6) common diseases and their control.  
(B) Eggs classification and grading, testing, preservation and marketing.
- N. B.—Pupils will be expected to have acquaintance with the practice of Animal Husbandry as indicated above.

**(5) SHORTHAND AND TYPEWRITING****Syllabus****(A) TYPEWRITING**

Full marks for typewriting examination will be 50 and the pass marks will be 36 per cent. Candidates will be tested in three different question papers as mentioned below :

**1. 1st paper—Speed Test. Marks—30.**

Conditions of Test :

- (a) Minimum speed required—25 words per minute,
- (b) A passage of 250 words to be set.
- (c) Time allowed—10 minutes.
- (d) Re-Write the passage, if it is finished before the allotted time is called out.

**2. 2nd paper—Tabulation Test. Marks—10**

Conditions of Test :

- (a) Time allowed—15 minutes
- (b) If the student finishes before the allotted time is called out, he/she should hand over the time thereon.

**3. 3rd Paper—Accuracy Test. Marks—10.**

Conditions of Test :

- (a) Time allowed—15 minutes.
- (b) If the student finishes before the allotted time is called out, he/she should hand over the answer paper to the invigilator who will mark the time thereon.

**4. Marking of Answer Paper :**

- (a) 3 per cent mistake is allowed ; above that, five words to be deducted for each mistake.
- (b) Striking a letter or typing a line over another, i.e. overlapping will be counted as mistake.



**B. SHORTHAND**

Full marks for Shorthand examination will be 50 and the pass marks will be 36 per cent. One hour will be allotted for the examination. The question paper will include the following :

- (1) 1st question—On theory. Marks 15.
  - (2) 2nd question—A passage containing 100 words to be written in shorthand outlines. Marks —15.
  - (3) 3rd question A passage containing 100 words in shorthand to be transcribed in English. Marks —15.
  - (4) For neatness—5 marks.
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### (6) ELEMENTS OF GENERAL ENGINEERING KNOWLEDGE

Introduction what is Engineering—its contribution to civilization—development of towns and cities, roads, railways, bridges, irrigation, prevention and regulation of flood : mechanical prime movers—steam engines, water-wheels, wind mills ; practical use of machinery and mechanical appliances, transport and communication : application of electricity for lighting, heating, locomotive purposes, generating, storing and transmitting of electric current, production of all kinds of electrical apparatus and appliances ; manufacture of chemical products ; minning, agriculture, etc.

Materials in common Engineering uses - Timber description and common forms -Teak, Babul, Sissoo, C.P. teak Sal and Jarul, Plywood.

Metals and Alloys—Cast iron, wrought iron, mild steel, steel, tin, copper, zinc, lead, aluminium, solder.

Measurement Elementary methods of measurement of length, area and volume ; measuring instrument commonly



used in Engineering, metric and British system of measurements—their relation to Indian measures.

Simple Machines—Levers—three types of levers—their application and advantages.

The wheel and axle—crank and connecting rod, capstan, bicycle.

Inclined plane—zig-zag roads and railways in hills, staircases, spiral staircases, screw thread, screw jacks, wedges.

Pulleys—Three principal systems of pulleys—advantages.

Motions in a machine—Linear motions (to and fro or reciprocatory) and circular (rotary motion), converting one into the other devices—rack and pinion, crank, bicycle pedals, piston linked to a crank, treadle in a sewing machine etc, eccentric, clamped and tapped, linkage.

Main sources of Mechanical Power—Heat produced by burning of solid, liquid and gaseous fuels—steam engines, petrol and oil engines, springs—clocks and watches; falling bodies, things placed at a higher level—tower clocks; falling of water—water-wheel; moving bodies—simple hammer driving a nail or riveting, wind mills; Electricity—Electric Motors

Certain Physical phenomena—Force that stops sliding—friction, bearings, types of bearing in common use, lubricants, force that tends to pull away when a body tied to a string is swung round and round—centrifugal force—bodies thrown horizontally or at an angle returns to earth describing a regular curve—projectiles; a body suspended by a cord if displaced from its position of rest swings to and fro—pendulum.

Transmission of motion—(i) Mechanical—belting—flat, round and V-belts, steel ropes, chains and sprocket, pulleys—principal, types, gears, spur gear, rack and pinion, bevel gears, ratchets—speed ratio of pulleys and gears.

(ii) Hydraulic pumps and presses.

Bicycle—Its construction and mechanism—component parts, working principle.

Steam Engine—Description of general working principle of boiler and steam engine ; application in locomotives.

Petrol Engine—General working principle, application — automobile tractor.

Electricity - Generation—dry cells and lead storage batteries ; description of generation of electricity by mechanical means and power. Its uses—heating, lighting.

Flow of electricity—analogy with flow of water through a pipe—volt, ampere and watt, unit of electrical energy, direct and alternating current ; conductors and insulators —materials common in use—use of different sizes of wires, resistance, Ohm's law.

Magnets—Permanent magnets, its behaviour, compass needle, electromagnets, electric bells.

Movements by Electricity—Description of Magnetic field, motion of a conductor carrying current in a magnetic field, description of a simple form of D.C. fan, its main components and their function.

Electricity measuring Instruments—Ammeter, Voltmeter, Wattmeter.

Names and uses of components in house wiring—Switch, Switch box, fuse, plug, various types of wiring in common use, fan regulator.

Building Materials—Bricks and tiles—method of manufacturing and standard size.

Lime and concrete—their general properties, preparation of mortar, mixing, laying and curing concrete, plastering and pointing, white-washing.

Other materials in common use—Asbestos and galvanized iron sheets plain and corrugated, paints and varnishes, bitumen, asphalt etc.

Joists, tees, angles, rounds and flats—standard forms and sizes, their uses.

Water supply and sanitation—Simple pipe connections, surface drains, sanitary fittings, sewers and septic tank.

Description of some important feats of Civil Engineering—Ancient temples, Taj Mahal, Howrah Bridge, Damodar Valley Scheme and Mor Project.

Engineering in Agriculture—common implements—country ploughs—common and improved designs ; bida, khurpi, nirani, scythe, etc.—their uses and maintenance.

Other essential appliances—pumps and other labour-saving devices.

Transportation—carts—hand-drawn, animal-drawn, Motor trucks and Tractor trailers.

Storage—Gola and silo.

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## (7) WOODWORK AND WORKSHOP TECHNOLOGY

### Woodwork

Descriptive : Timber—soft and hard, seasoning of timber, defects and preservation. Description and use of common forms of timber—Teak, Babul, Sissoo, C. P. teak, Sal, Jarul etc., Plywood.

Tools—hand tools common to the trade—description, materials made of, use, care, correct grinding and sharpening and their methods.



Principal operations—marking, sawing, planing, use of chisel. Jointing materials—nails, screws, dowels etc., glue-preparation and use.

Calculations—quantity of timber for simple articles, price of timber, comparative costs of different kinds of timber.

Practical : sawing to a line along and across the grain. Planing and chiselling, scantilings and planks to size.

Tenon and mortise joint with single and double side haunched joint, oblique bridle joint and common dovetail joint.

Making of— picture frame, tray, letter-box, ink-stand, low stools, etc. (at least two).

### Workshop Technology

Descriptive : Metals and alloys—cast iron, wrought iron, mild steel, steel, tin, copper, zinc, lead, aluminium, brass, solder—their properties and uses.

Hand tools and measuring instruments—Description, materials made of (tools), use, care, correct grinding and sharpening of hand tools, different kinds of files.

General safety-measures in workshop—protection against fire and accidents.

Hand sketching of simple tools, blue print reading, bearings, journals and their lubrication. Gears—various types—rack and pinion, spur and bevel gears, their functions.

Use of calipers, micrometer and vernier.

Bolts, nuts, studs, set screws, washers, pins, etc.—description and uses.

Smithy—tools and their uses ; forge—care, control and maintenance ; hardening and tempering.



Description of soldering, sweating, tinning, brazing and use of fluxes.

Practical : Forging square bar into round rods and round rods into square bars and hexagon bars.

Making simple articles, e.g., 'S' and 'L' hook, box handle and Khurpi.

Soft soldering—copper riveting in joining—two pieces of sheet metal,

Making of open rectangular box or tray, mug, funnel. Marking, sawing, chiselling, filing, and drilling—marking and finishing to given dimensions of a rectangular flat piece, outside and inside calipers for  $1/16''$  M.S. Sheet ; cycle wrench from  $1/8''$  M.S. Sheet.

Plain turning and screw cutting—demonstration by the Instructor.

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## (8) BUILDING MATERIALS AND CONSTRUCTION

Units and measurement : Methods of measurement of length, area, volume and weight. Indian and British system of units.

Common Building Materials : Timber—soft and hard, seasoning of timber, defects and preservation Description and use of common forms of timber—Teak, Babul, Sissoo, C.P. Teak, Sal, Jarul, etc., Plywood.

Metals and Alloys—cast iron, wrought iron, mild steel, steel, tin, copper, zinc, lead, aluminium, brass, solder,—their properties and uses.

Bricks and tiles—clay, moulding, drying, and burning Standard sizes and quality.

Lime and Cement—method employed in manufacture. Essential features.

Other building materials—Asbestos, cement sheets, black and galvanized iron sheets, slates, paints, varnishes, distempers, bitumen, asphalt, etc.

Miscellaneous—Preparation of mortars, mixing, laying and curing concrete. Plastering and pointing. White and colour washing,

Building Construction : Carpentry—common types of joints and fastenings for wooden trusses, partitions and walls, centering, doors, windows, selection of timber for above,

Brickwork—technical terms, bonds, hollow walls, prevention of damp, arches, sills, lintels, plastering and pointing, foundations—soling and grouting.

Columns, beams—timber and joints angle and tee iron, various types of roofs, floors, ceilings, partitions and staircases.

Concrete and reinforced concrete. Proportions of cement, sand ballast and water. Description of reinforcements in fixed and continuons slabs, lintels, beams, short columns. Shuttering and centering, laying of concrete.

Earthwork in Building Construction : Definition and technical terms. Measurements and setting out—Tools and implements used.

Method of excavation and stacking of earth, filling in and consolidating after brickwork, borrow pits.

Measurement of earthwork.

Water supply and sanitation : Sources of supply—rivers, tanks, and wells—types of wells—masonry and Tube Wells, lifting arrangement and storage, purification and distribution.

Surface Drains—level and sections.

Sanitary arrangements—Sanitary fittings, flushing arrangement to sewers, septic tanks.

Chain surveying—simple setting out of buildings and levelling of ground.

Estimating—Taking out quantities of simple brick building, simple analysis of rates.

Wood workshop : Description of tools and their uses, care, correct grinding and sharpening.

Principal operation—marking, sawing, planing, use of chisels.

Jointing materials—nails, screws, dowels, etc, glue preparation and use. Calculation of quantity of timber for simple articles.

Practical—Sawing to a line along and across the grain. Planing and chiselling scantlings and planks to size.

Tenon and mortise joint and common dovetail joint.

Making of door and window frames and simple trusses.

Bricklaying and Masonry : Description of tools and their uses—hammer, line and pin, plumb bob, rule, square, trowels (all types), level, etc. Common technical terms.

Practical—Use of square, plumb bob, level, line and pin etc.

Laying of bricks in simple bonds, preparation of mortar, completing some simple typical jobs in brickwork, mixing concrete, fixing shuttering, bending reinforcement and casting concrete slab or lintel.



# Structural Syllabus in English for Classes VI—VIII followed in West Bengal since 1964 (Old)

## LIST OF STRUCTURES

### CLASS—VI

- |   |   |
|---|---|
| (1) more, some more, no more, any more, a few more, a lot more of, some more of | (22) wait for, ask for                    |
| (2) Still   | (23) each other                           |
| (3) How many times, how often   | (24) can, can't, could, couldn't          |
| (4) ever, never   | (25) too, enough                          |
| (5) far, near, a long way   | (26) myself, himself, themselves          |
| (6) how tall, how big   | (27) why, because                         |
| (7) used to   | (28) says that.....is (Reported Speech)   |
| (8) more...than, fewer...than   | (29) must, mustn't                        |
| (9) less...than   | (30) while/when/until                     |
| (10) let's  | (31) has been working                     |
| (11) more of, most of   | (32) for, since                           |
| (12) as much...as, as many...as   | (33) said that.....was                    |
| (13) as good as   | (34) told him that...was                  |
| (14) longer than  | (35) saw him leaving/can hear her singing |
| (15) the shortest   | (36) has to, had to                       |
| (16) more difficult   | (37) too much, too many/not enough        |
| (17) less interested/least interested   | (38) either...or/neither...nor            |
| (18) was sitting/were eating  | (39) so do/neither have                   |
| (19) made of  | (40) although                             |
| (20) fewest   | (41) more quickly                         |
| (21) better, best, worse, worst   | (42) faster                               |



## CLASS—VII

- |  |   |
|--|---|
| (1) Relative clauses 'who'                     | (8) 'If' clauses factual condition                  |
| (2) Relative clauses 'which'                   | (9) 'If' clauses in Reported speech—'to' infinitive |
| (3) Relative clauses 'that' & Contact clauses. | (10) 'Though' clauses                               |
| (4) Past Perfect Tense                         | (11) 'If' clauses—Theoretical supposition           |
| (5) Reported Speech-Past Tense                 | (12) Reported requests                              |
| (6) How to, what to do                         | (13) Question Tags                                  |
| (7) Passive Constructions                      | (14) Had to/ought to                                |

## CLASS—VIII

Abridged and simplified selections the structures were drawn from the extracts selected. The following have been dealt with :

- (1) Passive Forms—in all forms
- (2) More Complex Sentences
- (3) Gerunds
- (4) Participles
- (5) Infinitives of different types
- (6) More Reported Speech

## THE NEW SYLLABUS

(from the Academic Session 1984)

The inventory of teaching items given below comprises the framework for the new syllabus.

How the draft syllabus was prepared

Material in hand : The old structural syllabus from III to VIII.

Stages in preparation of the new syllabus.

- (a) All the structures included for the different levels were grouped under different heads i.e. Noun Constructions, Tenses, Adjectival Constructions, Verb Constructions etc.
- (b) Items were selected from each head and 'chunked' according to their presupposed natural co-occurrence.
- (c) Functions which may be realized by the different groups of structures were listed.
- (d) The functions—interpersonal (commanding, requesting) and discourse types (defining, classifying, exemplifying) were allotted for each year of English according to the pupils' maturity and classroom feasibility.
- (e) The linguistic content for each year was planned according to the functional needs of the learner.

### Note on the Syllabus

The list represents our views on what may be the most feasible way of utilising existing resources (structural) in a more functional way. It attempts to

- (i) incorporate structures already set out in the old syllabus.

- (ii) loosen the old order of presentation.
- (iii) expose children to larger chunks of language than was done in the past, i.e. be more analytic.
- (iv) focus attention on tasks for which the existing structures could be used.
- (v) provide more scope for pupils to exercise their conceptual competence and to put in more sustained effort in using the language resources/conceptual resources.
- (vi) ensure coverage of structures prescribed already.
- (vii) provide motivation for using language in a naturalistic way.

Ordering : Guided by old structural list.

Functions ordered according to natural complexity/  
classroom feasibility :

## SYLLABUS

### CLASS VI (from 1984)

<i>Function</i>	<i>Structures</i>	<i>Example</i>
1. (a) Carrying out directions	Verb + Adverb + please Verb + adv. particle V + a/an + count noun	Come here please Stand up. Take a pen.
(b) Performing simple actions	V + the + noun V + my/his/her + noun	Clean the black-board Hold my umbrella.
(c) Drawing maps (N/Pronoun)		

Function	Structures	Example
(d) Giving directions	V+O+adverb V+to+Np V+O+in/on/under near+NP	Put it there. Walk to the table. Put it on the table.
2. Performing more Complex action	V+the+ordinals+NP V+from+Np+to +NP V+O+O V+pronoun+to+NP	Take the first book Walk from the table to the window. Bring me John's book Give it to Ram
3. Warning	Don't+V Don't+V+there	Don't talk Don't sit there
4. Playing guessing games	What questions	What is this/that ? Where is Ram ?
5. (a) Asking for information about colour, shapes, sizes, identity, family relationships, location etc.	What colour ?	It is blue It is rectangular.
(b) Giving above information	It is a It is a the adj NP	It is a large house He is a doctor He is a good doctor
6. Getting acquainted	I am/you are/comes from	He comes from Punjab



<i>Function</i>	<i>Structures</i>	<i>Example</i>
7. (a) Describing daily activities.	Simple present/Has	He works in Delhi
(b) Describing habits and appearances of animals	Connective 'and'	Mr. Bose has a car He and his wife go out .....
8. Interpreting class/bus/train time tables.	Time, Days of the week, months, from/to Numbers	The train leaves Howrah at..... ..... We study History from.....to.....
9. Asking for information	Questions (using do/does)	What does he do?
10. Describing unseen activity	Present Continuous 'Still'	Mohan is absent He is still helping his mother.
11. Stating facts or giving information about the past	Simple Past form of be	He was twelve last December
12. Stating facts or giving information about the future	Simple Future form with shall and will	He will be twelve in December.
13. Expressing wish/desire/likes/dislikes	V+infinitive	I want to be a doctor. I like to paint.
14. Talking about the weather	Question and answer forms in the three tenses (Simple forms)	What was the weather like last week ? It was very hot/windy/cold etc.

<i>Function</i>	<i>Structures</i>	<i>Example</i>
15. Asking for/giving information about number/prices/amount	How much ?  How many ?	How much will it cost ? (It will cost) Rs. 10.00 How many boys are there in your school ? (There are) five hundred (boys).

## CLASS VII (from 1985)

<i>Function</i>	<i>Lang. Forms and Structures</i>	<i>Example</i>
1. (a) Narrating stories	Simple Past used to	There was a clever farmer
(b) Reporting events with Descriptive Padding	Past Continuous Introduction only 'There' Some/ Any/No was/were/Ago	His name was Rahim. One day he lent his plough
(c) Detecting missing information	in front of between behind/into/out of, over/under/above towards beneath 'of' with inanimate object. Adv of frequency/ manner very	to .....  (History, folk- tales legends.)
(d) stating facts from dialogues	'but'/have/has got	

<i>Function</i>	<i>Lang. Forms and Structures</i>	<i>Example</i>
2. Asking questions to detect contradiction or confirm suspicions	Don't, Doesn't Do/Does/Did	Did Rahim lend his plough to Rajan
3. Making comparisons	-er, -est, more, most.  less than, fewer, more of, most of, as adj as	Geography e.g. Saturn is smaller than Jupiter. Jupiter is the biggest planet.
4. Making plans for the future	Going to/wait for/ ask for/  Simple Future Let's Anything/something nothing.	The boys will go for a picnic next Sunday. They are going to take their .....
5. (a) Seeking permission (b) Inviting (c) Making requests	shall, would, could	Could you come ..... shall we go.....
6. Expressing	can, can't	I can't do this sum.
7. (a) Miming buying and selling. (b) Making verbal presentation of mathematical problems	How many/much/ How old a lot  of	Ram had six marbles. His father gave him two—How many does he have now?

*Function*

*Lang. Forms and Structures*

*Example*

8. Calculating distance Calculating duration by	How long/far	How far is it from Madras to Calcutta ? How long does it take by air.
9. Emphasizing activities	Reflexive pronouns, both Neither nor, too	I did it myself. They both worked. Neither Ram nor.....
10. (a) Guessing/ Inquiring (b) Describing just completed action	Either/or Present Perfect Tense	It's either Ram or Rahim Have you done your homework ?

CLASS VIII (from 1986)

1. Re telling a story Describing how something happened	Past Tense/Past Perfect Adv. clause-when/while/if/though	Mr. Das was sitting by his fireside one evening after dinner when he was surprised to receive a visit from Rahman.
Carrying messages Reporting conversation facts/ possibilities Summarising Writing from experience	Noun clause Present Perfect Reported Speech	Mrs. Bose said that.....Mr. Bose has asked you to .....



*Function*

*Long. Forms and Structures*

*Example*

- |                                |                       |   |
|--------------------------------|-----------------------|---|
| (a) Presenting fact            | Present Perfect Cont. | India has been  |
| (b) Presenting current events. |                       | exporting mangoes<br>...(Geography).<br>America has been<br>launching space-<br>ships (Science,<br>current events). |

- |  |  |   |
|--|--|---|
| 2. Describing a particular process/<br>how things work<br>(Geographical<br>Scientific) | Passive with/<br>without by<br>Participial<br>Adjectives | Soil is produced<br>by processes that<br>alter parent<br>materials. The<br>broken bits are<br>then taken..... |
|--|--|---|

- |  |                                       |  |
|--|---------------------------------------|--|
| Defining                                     | Passive/who/which<br>clause           | A volcano which<br>may erupt in  |
| Categorising/<br>classifying<br>exemplifying | Can/may plus is plus<br>Ved (passive) | future is known<br>as, Dorment<br>Volcano. The<br>process of vol-<br>canism is two<br>types-Intrusions<br>and Extrusions.<br>(Maths., Geo-<br>graphy, Science) |

- |                                 |              |   |
|---------------------------------|--------------|---|
| Relating causes<br>and results. | So<br>had to | I had to help my<br>mother so I was<br>late |
|---------------------------------|--------------|---|

- Making conclu-  
sions. Explaining  
Expressing  
obligations

<i>Function</i>	<i>Lang. Forms and Structures</i>	<i>Example</i>
3. Presenting complex Problems and Solving them Arguing	why/because	Why do you think the man ran away as soon as he saw Mr. Sen ? Because he was afraid Mr. Sen would recognise him.
4. Warning Advising Making inferences	Ought to/must/ mustn't	You ought to be early. I think you ought to practise more. You must study hard.
5. Bearing witness against or for someone Answering advertisements.	S + V + O + Ving	I saw the thief coming out of the house.

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## Syllabuses in Geography for old Course

M. P. ( S. F. ) 1985.

### Classes IX & X

#### CLASS IX

( 100 pages including illustrations, diagrams, charts, photographs, etc. ) Size Double Demy ( 1/16 ) and type Small pica.

1. Meaning of the Geographical regions with particular reference to India. ( 4 pages )
2. Account of the undernoted major Geographical regions of India :
  - (a) The Himalayas.
  - (b) The Ganga Plains (Upper, Middle and Lower with emphasis on the lower Ganga plains—i.e. West Bengal ).
  - (c) The Desert.
  - (d) Kutch and Kathiawar Peninsula.
  - (e) The Deccan Plateau – including the Lava Region, Mysore Plateau & Chotonagpur Plateau.
  - (f) Eastern Coastal Plains. ( including the deltas of the Mahanadi, the Godavari, the Krishna and the Cauvery ).
  - (g) Western Coastal Plains.

(h) The Brahmaputra Valley.

(i) Hilly States of N. E. India ( Sikkim, Meghalaya, Arunachal, Nagaland, Manipur, Mizoram and Tripura ).

A brief account of the major elements of Physical Geography should be integrated with the descriptions of the afore-said regions. In the study of the above-mentioned regions emphasis should be laid on the influence of the physical environment on human life and activities with an integrated approach.

### CLASS X ( 72 pages )

( 56 pages – reading and 16 pages illustrations, diagrams, charts, photographs etc. ) Size Double Demy ( 1/16 ) and type Small Pica.

1. Regional characteristics of the food, dress, shelter and Languages of the Indian People. ( 8 pages )
2. India's development with reference to :  
Agriculture, Mineral, Power and Industry – a study of the developmental activities in these fields in the Post-Independence period with special reference to West Bengal. In particular, India's development in Agriculture and Industries under the Five Year Plans have to be highlighted in brief. ( 24 pages )
3. India in relation to the Outer World :  
(i) The following countries to be studied in respect of their Location, Important Mountains and Rivers, Population and Capital city ;



U. K., U. S. A., U. S. S. R., France, West Germany,  
Japan, China, Argentina, Brazil and Australia.

( 16 pages )

(ii) India's Trade relations with the following adjacent  
countries :—

Burma, Sri Lanka, Bangladesh, Pakistan, Afghanistan,  
Nepal, and Bhutan. (8 pages)

4. Oral—Oral examination will be based on the projects and  
items of work performed and included in the Work Book

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**Syllabus in Geography for New Course  
For Candidates appearing at the Madhyamik  
Pariksha, 1986 and onwards.**

**CLASSES IX & X**

- (1) The new Syllabi in Geography for Classes IX and X will be introduced from the academic sessions 1984 and 1985 respectively instead of from the academic sessions 1983 and 1984.

The existing Syllabi in Geography for Classes IX and X, as published in the Board's Brochure on Curriculum and Syllabuses, will continue in Classes IX and X for the academic sessions 1983 and 1984 respectively.

- (II) Textbooks in Geography for Classes IX & X to be written in accordance with the new Syllabi as aforesaid are to be submitted to the Board by publishers/authors on or before 31-5-83 & 30-3-84 respectively, for the purpose of review.

The textbooks in Geography to be submitted as above, will be reviewed by the Board for approval and the approved textbooks with Textbook Numbers to be recommended by the Board will only be prescribed by the schools from the academic session 1984.

## Syllabi in Geography for Classes IX &amp; X

## PART—I

(FOR CLASS IX from 1984)

<i>Topics</i>	<i>Periods</i>	<i>Pages</i>
<b>A. Physical Geography</b>		
1. Earth as a planet		
(i) View of the earth from space. Shape (oblate spheroid) and size of the earth (Equatorial diameter about 12,757 km and Polar diame- ter about 12,714 km).	2	2
(ii) Movements of the earth-Rotation and revolution and their effects- formation and length of days and nights, change of seasons, deflec- tion of planetary winds.	5	7
(iii) Determination of the location of a place on the earth's surface- properties of parallels of latitude and meridians of longitude and their relationship. Longitude and time (mathematical calculation needed). International Date line and antipodes.	5	8
	12	17

<i>Topics</i>	<i>Periods</i>	<i>Pages</i>
2. (i) Rocks-their broad classification based on their origin-Igneous, sedimentary and metamorphic rocks.	2	2
(ii) Different types of mountains (Fold, block, Volcanic and Relict mountains), plateaus (Dissected, Intermontane and lava plateaus), plains (alluvial-flood plains and deltaic plains, coastal plains and peneplains).	4	6
(iii) Earthquakes-causes and effects.	1	1
(iv) Weathering of the earth's crust mechanical and chemical, their causes and effects.	2	3
(v) Work of rivers, glaciers and winds as agents of transportation and deposition.	4	5
	13	17

## **B. Regional, Economic and Human Geography**

### **3. India**

(i) Location of India. Political divisions of Indian Union into States and Union Territories-their reorganisation since 1950 to be stated in a broad and general manner.	2	4
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<i>Topics</i>	<i>Periods</i>	<i>Pages</i>
India's neighbouring countries : Nepal, Bhutan, Bangladesh Burma, Sri Lanka, Pakistan, Afghanistan.	6	9
China will be dealt with in Class X.		
(ii) Geographical importance touching upon relief ; drainage ; climates- natural vegetations ; soils ; irriga- tion ; major agricultural crops ; rice, wheat, millets, jute, tea, coffee, sugarcane, cotton, oilseeds, power resources and minerals-coal, iron ore, petroleum, manganese, ore, bauxite, mica Industries-iron and steel and major engineering industries, cotton and jute textiles.	40	47
Statistical Information are to be quoted from latest official sources of the Government of India.		

	48	60
Total for Class IX	73	94

## PART—II

(FOR CLASS X from 1985)

*Topics***A. Physical Geography** *Periods* *Pages*

## 1. Atmosphere

(i) Composition of the atmosphere 1 1(ii) Elements of weather and climate—  
temperature, pressure, wind, rela-  
tive humidity, clouds, precipitation  
and their inter-relation wherever  
possible. 4 5(iii) Major factors influencing air  
temperature and pressure in the  
world—temperature and pressure  
belts of the world. 5 6

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10 12

## 2. Hydrosphere.

Ocean currents; tides, types of lakes. 5 6**B. Regional, Economic and Human Geography**

## 3. India

(i) Population-distribution and density  
(1981). Major ports and cities. 5 6

<i>Topics</i>	<i>Periods</i>	<i>Pages</i>
(ii) A few type regions-The Hooghly industrial region and Haldia industrial complex, Chotanagpur : Mineral and industrial areas Gujarat State, Andaman and Nicobar islands. Black soil region of the Deccan.	10	12
	15	18
<b>4. Asia</b>		
(i) : Location and Geographical importance touching upon relief (mountain, plateaus, plains and islands) ; drainage ; climates.	7	8
(ii) Geographical account of the following —		
(a) China with particular reference to Yangtse Kiangbasin,		
(b) Japan with particular reference to industrial regions,		
(c) Saudi Arabia and neighbouring oil producing countries of South West Asia.	10	12
	17	20
<b>Total for Class X</b>	<b>47</b>	<b>56</b>

## LIST OF ILLUSTRATIVE MATERIALS, e.g. MAPS, CHARTS, DIAGRAMS etc.

The above mentioned topics should be properly illustrated with maps, charts, diagrams etc. so as to make the contents interesting and helpful in understanding. The minimum requirement is indicated below :

1. Diagrams ( at least 20 in number ) to illustrate properly items No. 1 and 2 for Classes IX and X.
2. Maps ( at least 3 in number drawn on scale\_\_units multiple of 5, 10 etc. ) to indicate location and political divisions of India, and neighbouring countries.
3. Maps ( at least 15 in number not necessarily on scale ) to illustrate various topics of India.
4. One Map ( drawn on scale-units multiple of 5, 10 etc. ) to indicate location of Asia and the countries.
5. Maps ( at least 3 in number not necessarily one scale ) to illustrate various topics of Asia.

### Page limit and size of the book

1. Total number of pages in the book—150 ( contents ) plus 50 ( illustrations ) plus allowance upto 10.
  2. Size of the book—Double Demy 1/16.
  3. Type—Small pica.
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# USE OF ALTERNATIVE MATERIALS OF WARE PARTS, DISCREPANCY

The above is a summary of the results of the investigation conducted by the Bureau of Aeronautics, Department of the Navy, in connection with the use of alternative materials of ware in the construction of aircraft parts. The results of the investigation are as follows:

1. The use of alternative materials of ware in the construction of aircraft parts is a common practice in the aircraft industry.
2. The use of alternative materials of ware in the construction of aircraft parts is a common practice in the aircraft industry.
3. The use of alternative materials of ware in the construction of aircraft parts is a common practice in the aircraft industry.

The use of alternative materials of ware in the construction of aircraft parts is a common practice in the aircraft industry.



The use of alternative materials of ware in the construction of aircraft parts is a common practice in the aircraft industry.

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2. Size of the book—1 or 2 pages

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